

Education Program for Bachelor of Physical Medicine and Rehabilitation

Program Title: Physical Medicine and Rehabilitation

Education level The First Level of Academic Higher Education

Qualification: Bachelor of Physical Medicine and Rehabilitation

Program volume: 240 ECTS Credits (1 credit = 30 hours)

Language of Instruction: English

Aim of the Program:

To prepare specialist in Physical Medicine and Rehabilitation:

- Concerned with the promotion of physical and cognitive functioning, activities (including behaviour), participation (including quality of life) and modifying personal and environmental factors;
- Responsible for the prevention, diagnosis, treatment and rehabilitation management of people with disabling medical conditions and co-morbidity across all ages; with holistic approach to people with acute and chronic conditions in various facilities - from acute care units to community settings, utilizing relevant rehabilitation activities.
- Concerned about professional development and life long learning.

Requirements for involvement:

- Foreign Nationals with corresponding documentation should apply (send the documents) to the Ministry of Education and Science of Georgia. After approval from the Ministry they have right to start the undergraduate course.
- Georgian citizens are required to pass through the National Exams

Learning and Teaching Methods and Evaluation System

Essential terms for teaching are: integration of theoretical and practical teaching; New technologies must have an advantage during the teaching. Teaching is student oriented

which means students' active participation in the study process and involves case teaching, discussions, empiric teaching, seminars and projects.

Teaching forms used in study process:

- Interactive lectures, seminars, colloquiums
- Studying in clinical environment
- Simulators and moulages
- Performing a roll of patient or physician
- Laboratory teaching
- Presentations
- Participation in scientific research
- Practice

Learning courses of the English medium program for Bachelor of Physical Medicine and rehabilitation

	LEARNING COURSES	SEMESTERS	NUMBER OF CREDITS (ECTS)
	A/ MANDATORY SUBJECTS		
1	Introduction to specialty	I	1
2	Medical physics, biophysics	I	4
3	Medical chemistry	I	3
4	Medical biology, Genetics	I	3
5	Histology, cytology and embryology	I,II	6
6	Human Anatomy	I,II	15
7	Medical biochemistry	II	2
8	Microbiology	II	2
9	Medical parasitology	II	2
10	Physiology	II, III	10
11	Pathological anatomy	III	3
12	Pathophysiology	III	3
13	Basics of pharmacology	III	3
14	Biomechanics and kinesiology	III, IV	10
15	Exercise physiology and biochemistry	III, IV	9
16	Dynamic Anatomy	III, IV	9
17	Basics of Diagnostics	IV	5

18	Basics of laboratory medicine	IV	2
19	Basics of radiology	IV	2
20	Hygiene	IV	2
21	Internal medicine	V	5
22	General surgery	V	3
23	Neurology	V	3
24	Obstetrics and gynecology	V	2
25	Oncology	V	2
26	Ophthalmology	V	1
27	Dermatology	V	2
28	Physiotherapy and Balneology (1 and 2)	V, VI	7
29	Essentials of Massage	V	2
30	Clinical and functional Assessment in Physical rehabilitation (1 and 2)	V,VI	6
31	Pediatrics	VI	2
32	Geriatrics	VI	2
33	Rheumatology	VI	3
34	Traumatology & Orthopedics	VI	4
35	Manual therapy and Acupressure	VI	3
36	Assistive Devises in Physical Rehabilitation	VI	2
37	Medical tourism	VI	2
38	Child neurology	VI	2
39	Speech and language therapy	VI	3
40	Clinical principles of physical medicine and rehabilitation	VI	3
41	Therapeutic exercise	VII	7
42	Therapeutic massage	VII	4
43	Sports Medicine	VII	3
44	Adaptive physical education	VII	4
45	Pulmonary rehabilitation	VII	4
46	Cardiovascular rehabilitation	VII	5
47	Physical rehabilitation in Neurology	VII	5
48	Physical rehabilitation in Pediatrics	VIII	4
49	Physical rehabilitation in Geriatrics	VIII	5
50	Physical rehabilitation in traumatology & orthopedics	VIII	5
51	Principles of evidence based medicine	IV	2
52	Basics of scientific research	II	1
53	Basics of Psychology	III	2
54	Bioethics	II	1
55	Public health and sociology	II	2
56	Informational technology	II	2
57	History of medicine	III	1
58	Latin language	I	2
59	Georgian language	I,II,III	8

	B/ELECTIVES		
60	Valeology	II	1
61	Biophysics of electromagnetic radiation	II	1
62	Biomechanics of treatment with water (SPA)	IV	2
63	Chemical and Radiation Safety	IV	2
64	Extrime conditions etiology, pathogenesis, and prevention principles	IV	2
65	Oto-rhyno-larngology	V	2
66	Occupational Diseases	V	2
67	Rehabilitation principles of cerebral palsy	VI	1
68	Emergency management and civil protection	VI	1
69	Acupuncture and reflexotherapy	VII	2
70	Sports massage	VII	2
71	Introduction to occupational therapy	VIII	2
72	Resort Management	VIII	2
	Total credits		240

Short description of the Learning

Courses Introduction to specialty

The objective of the “Introduction to specialty” course is to acquaint students with entity of their future specialty and the role of the specialist of Physical and Rehabilitation medicine in the modern health care system. The course also sets a goal to familiarize students with structure and regulations of Tbilisi State Medical University.

Biophysics and medical physics

The course builds physical frame of mind and introduces students to understanding how basic physical principles can describe and be vary useful tool in explaining biological processes on molecular level. The course gives students insight into physical principles that he would need for better understanding of anatomy, biochemistry, physiology, histology and pathology. On the other hand this course is in compliance with chemistry and biology and gives different prospective to the same subjects. Topics to study will include structure and function of the biological membranes, transport of energy and mass in biological systems and influence of external energy sources on them, as well as basic electromagnetic , optical and acoustic properties of human body. The course intends to explain how basic physical principles that stand behind all diagnostic methods can help in obtaining better images and in better utilization of equipment, as well as protection of patients and personal. Through laboratory works students will learn to handle with simple measuring devices that are almost always part of equipment that they will be working with to collect data and interMedical chemistry

Medical biology, Genetics

The subject Medical Biology is aimed to present to students the basics of the contemporary knowledge about biological processes bearing in mind their medical orientation and their future work in medical practice which is changing and improving in accordance to the scientific

progress in biomedical sciences. Therefore modern biological concepts are presented to students in an integrated manner using important medical examples.

Medical biology covers cell biology, molecular biology and developmental biology. The teaching is performed through lectures and seminars. In lectures the students can learn about the most important old and new biological discoveries and concepts and their significance for human diseases and their treatment. In seminars students are encouraged to actively discuss and solve problems related to human diseases.

Human Normal Anatomy

The aim of the course in Anatomy is to provide the student with knowledge of the structure of the human body and enable him to fully understand normal and pathological human macromorphology. The main objective of the gross anatomy course is to provide the students with an anatomical framework that will be enduring so that in the future they can recall the anatomy of the patient when required.

The task of the educational process is to enable the student to comprehend the structure of the human body as a whole constituted of individual interconnected systems and to endow him with a competence in recognizing organs, systems and regions of the human body through personal experience in dissecting a cadaver and examining anatomical preparations.

The content of the course consist of systemic anatomy of the human body with the emphasis on clinical aspects of individual elements, theoretical and practical lessons on learning about bones, joints and muscles, abdominal organs, heart and practical lessons, as well as the central and peripheral nervous system and the senses.

Students are also introduced to imaging modalities and the purpose of this aspect of the course is to reinforce the gross anatomy and assist in the students ability to learn the subject matter.

Histology, cytology and embryology

The course offers a student a) cytological (ultrastructural , cytochemical and functional) features of differently differentiated cells in the human body; b) an insight into structural and functional relation of basic tissues and organ systems (special cytology, general histology, systemic histology) c) a theoretical, as well as clinical approach to basic concepts of reproduction, early development of human embryo, The whole body of knowledge covered by this course offer a basis for understanding normal functioning of organism and its pathological changes together with various clinical phenomena the student encounters in his/her study of clinical medicine.

The teaching is performed through lectures, seminars, laboratory sessions. Laboratory sessions include the study of glass slides under the light microscope

Medical biochemistry

The course aims to provide an advanced understanding of the core principles and topics of Biochemistry and their experimental basis. and to enable students to acquire a specialised knowledge and understanding of selected aspects by means of a stem/branch lecture series and a research project. The major objectives of the Medical Biochemistry course are: to provide the first year medical students a solid foundation in the biochemical concepts which are needed for the practice of medicine.

The teaching is performed through lectures, seminars, laboratory sessions.

Microbiology

The aim of the course is to provide students the main pathogenic properties of microorganisms, pathogenesis of diseases caused by microorganisms, basic principles of etiological diagnosis of infectious diseases and the effect that antimicrobial agents have on microorganisms.

The content of the course includes basic data about the particular, most frequent pathogenic microorganisms – bacteria, viruses, fungi and parasites – (taxonomy, morphology, physiology, natural habitat);

lectures and practical laboratory training are teaching/learning forms

Medical parasitology

The course of Medical Parasitology includes medical ecology and studies the impact of ecological factors on normal functioning of human organism. It studies the basic principles of the origin and development of anthro-ecological systems. Parasitic diseases represent a major global problem nowadays, especially in the countries of the third world, where millions of people die due to parasitic disease annually. The course of Medical Parasitology studies the biology of parasites, united in various systematic groups: their classification, morphologic characteristics, biochemical and physiologic aspects of their vital activity, their life cycle in host organisms, including humans, as well as pathologic mechanisms of diseases caused by the parasites.

Physiology

Main aims of human physiology course (Human Physiology I and Human Physiology II, see later) as an academic subject is the study of human functions in good health, interconnection of those functions, regulations of the human body and physiological

integration of the organ systems to maintain healthy conditions in unstable environment and in the processes of evolution and individual development. Physiological function of the body and its parts is to achieve life sustaining effect that refers to the cellular metabolism, exchanges of matter, energy or information with the environment.

To make the learning process easier during the course, each body system is studied separately, taking into consideration that the basics of the medico-biological thinking is that all body organ systems contribute to the homeostasis of the entire organism. The basis of integrated medico-biological approach to understanding of body functions is that the functions of all organs and systems are interrelated, and all this complex of regulatory mechanisms ensure not only dynamic equilibrium within the human body, but also the adjustment of human body to constantly changeable physico-chemical and social environmental conditions.

The goal of Human Physiology I is study of cellular functions (excitability, conductivity, contraction, transmission) and regulatory systems (nervous, hormonal) in healthy body.

The goal of Human Physiology II is study of functional systems and their interrelations in healthy body.

Pathological anatomy

The course aims at providing students with knowledge on the pathology of diseases by exploring microscopic changes in organs and entire organisms and microscopic changes in cells and tissues, and by applying the acquired knowledge with the etiopathogenesis and clinical signs of disease. Students study typical morphological changes in cells, tissues, organs and organism, and practice using histological biopsy findings and autopsy results. They analyze clinical data and laboratory findings and compare and integrate clinical and pathological anatomy findings. The teaching is performed through lectures, seminars, laboratory sessions. Laboratory sessions include the study of glass slides under the light microscope.

Pathophysiology

The aim of the course is to introduce the basic pathophysiological concepts and visions common to various group of diseases from the integral point of view. Pathophysiology combines theoretical, basic, experimental and clinical knowledge. This approach enables students to understand pathobiological foundations of the disease manifestations.

The content of the course comprises the fundamental notions of pathophysiological processes, the concepts of health and disease, etiology and pathogenesis, interdependence of noxious agents, organism and environment with the disease. lectures, problem oriented seminars and practical laboratory training are teaching/learning forms.

Basics of pharmacology

The aim of the course is to get students familiar with basic concepts of drugs, their characteristics and actions, toxicology and adverse drug reactions, that would enable students to successfully handle drugs in the course of patient treatment.

General pharmacology includes: drug administration, drug fate in the body. absorption, distribution, drug elimination and other pharmacokinetic characteristics, pharmacodynamic aspects and mechanisms of drug action, factors that modify drug action, drug toxicology and adverse drug reactions.

The teaching is performed through lectures, seminars, practical laboratory trainings..

Biomechanics and kinesiology

Biomechanics with kinesiologyII is intended for formation of the thinking future rehabilitation doctor with the categories of exact sciences, providing to the students deeper understanding of biomechanical and kinesiological patterns of functioning of human body in normal and pathological conditions. The goal of education course, specifically, could be formulated as follows:

Students shall study the mechanical laws of living organisms, at their molecular, cellular, tissue, organic and organism levels;

Through familiarization with the mathematical and mechanical models of the living organisms and their structures the students should be able to forecast the diseases and apply various treatment techniques for the purpose of rehabilitation of the patients;

On the basis of biological model of the entire system of the joints gain in-depth knowledge of the living organisms and their structures (e.g. locomotive system, masticatory apparatus, respiratory system etc.) movements and possibilities of their control; students should be able to process and analyse biomechanical and kinesiological information (mostly graphical data) gained using different advanced technologies from human organism, with respect of rehabilitation;

Excercise physiology and biochemistry

Learning course continues Physiology and Biochemistry of Physical Activity I and studies general, fundamental and universal physiological and biochemical processes in body during different types of physical activity

Dynamic Anatomy

The aim of the course is to teach the coordinatory, regulatory and control mechanisms of the nervous system in human movement, age- and sex-related characteristics of human static positions, biomechanics and morpho-functional characteristics.

Basics of Diagnostics

The objective of this course is to provide students with basic skills related to history taking and physical examination of patients. Students working in a small groups under the supervision of physician instructor take medical histories and examine patients. They will also learn to record the pertinent information in a comprehensive standardized format

Basics of laboratory medicine

The Laboratory Medicine academic course aims to provide students with information on the purposes and capabilities of laboratory services, on research that is currently widely used in every type of medical establishments, amongst them, Physical Medicine and Rehabilitation institutions. Additionally, it aims to present students with laboratorial research algorithms that will enable graduates of the faculty of Physical Medicine and Rehabilitation to select those types of laboratorial research, which will be optimal in every concrete occasion and will create preconditions for achieving maximal medical treatment effects.

Basics of radiology

The objectives of the course are knowledge of Principles, Physical Basics and methods of Diagnostic, Therapeutic and Interventional Radiology. The course includes: Introduction. Radiology as a sphere of clinical medicine and historical overview.; Overview of Diagnostic Radiology Modalities, Types of Information; Physical basics and general information about X-rays; The basic types of X-Ray studies; The Basic concept of Radiobiology; Physical basics

and general information about Radiotherapy, possibilities in treatment of oncology and non-oncology patients .

Hygiene

The purpose of this course is to prepare target oriented environmental health practitioners, researchers. Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment. It also refers to the theory and practice of assessing, correcting and preventing those factors in the environment that can potentially affect adversely the health of present and future generations. The deep knowledge of environmental health issues gives the possibility to future doctors and health care professionals of thinking in a more wide scale and protects health of population.

Internal medicine

The course in internal medicine must provide opportunity for students to gain knowledge on diagnosing, early detection, managing and prevention of internal medicine diseases which are treated by means of conservative methods.

The teaching also comprises the preventive and social components of the internal medicine, together with the principles of the rehabilitation and assessment of the working capability of the patients.

General surgery

The subject of General Surgery I and II is the first step for all surgical subjects (propaedeutical course). Student will learn the general principles of surgery by participating in the care of patients in the operating room, on the ward and in the clinic. In addition to clinical experience. The subject of General Surgery includes such important surgical topics as: aseptics and antiseptics, bleeding and methods of arresting of bleeding, blood transfusion, blood substitute solutions, anesthesiology and resuscitation, types of surgical operations, general principles of traumatology, burn, frostbite, electrocution, purulent surgical diseases, surgical parasitology, general oncology, malformations, plastic and reconstructive surgery and transplantology.

Neurology

The goal of the course is: to gain the basic knowledge about functional anatomy of nervous system and main neurological diseases; to give the knowledge of principles of topical diagnosis of CNS pathology, Introduce with modern appearances in etiology, pathogenesis, diagnose, treatment of nervous system's disorders.

Obstetrics and gynecology

The aim of the obstetrics and gynecology course is to enable students to understand and discuss the clinical science basis and practice of obstetrics and gynecology. The teaching is performed through lectures, seminars and bedside practicals.

Oncology

Understanding the prevention, epidemiology, natural history and management of the common and curable cancers should consequently be a high educational priority. The care of patients with cancer necessitates the conscientious cooperation of physicians from many different disciplines (pathology, radiology, radiation oncology, surgery, and internal medicine). By introducing students to the principles of each oncologic discipline and their application to a wide variety of specific cancers, students learn to appreciate the relevance of pathology. Integration of a clinical oncology curriculum into the pathology course helps solve the cancer education.

Ophtalmology

The aim of the course is to teach the students clinical anatomy, functions and physiology of the eye and most common eye diseases, as well as determination of the complexity of diseases. First aid care and determination of tactics for further management.

Dermatology

The main goal of the course is students familiarization with principles of diagnostics, treatment and prevention of the most widespread skin and venereal diseases in children and adults.

Physiotherapy and Balneology (1 and 2)

The goal of the discipline PHYSIOTHERAPY AND HEALTH RESORT THERAPY II is to teach students :

- Indications and contra-indications of application of physical factors for the purpose of treatment /rehabilitation
- The differentiated application of physical factors at diseases of various systems of an organism
- Private techniques of application of physical factors for treatment/rehabilitation
- Resorts of Georgia

Essentials of Massage

The objective of the “Essentials of massage” course is to acquaint students with entity (essence) of massage basic principles, technical characteristics of massage movements and methodical references, particularities of separate body parts massage. Practical training, regular consultations, multimedia teaching programs are used.

Clinical and functional Assessment in Physical rehabilitation (1 and 2)

The objective of the course is to acquaint students with methods and principles of clinical and functional evaluation of a patient as well as different aspects of influence of immobilization on a patient's health conditions. With that end in view the course includes evaluation of coordination and gait, mental status and neuropsychological analysis, evaluation of functional independence and adaptation to environment.

The course provides possibility of practical and clinical application of acquired theoretical knowledge in patients with disability, and this serves for better understanding and drawing up the appropriate rehabilitation program as well as for subsequent successful rehabilitation.

Pediatrics

The aim of the pediatrics course is to give the student knowledge on etiology and pathogenesis of diseases presenting in childhood. This aim should be reached through theoretical and practical forms of teaching which make possible getting specific knowledge, skills, habits and attitudes sufficient for proper health care for children

Geriatrics

Teaching course is conducted through practical exercises, clinical work (bedside examination: interviewing and examination of elderly patients, mastering prescription and

completing relevant documents, attending daily rounds, preparing presentations, night calls etc.), case discussions.

The basis of teaching strategy is the principles of adult education where prevailed are interactive methods.

The strategy includes: Clinical case discussions, seminars, lectures, working in the laboratory of clinical skills, mastering observation diary, using of video and direct clinical teaching methods.

Rheumatology

This is an outpatient service rotation designed to immerse the student extern in the evaluation and care of patients with a wide variety of rheumatic diseases. Special emphasis is placed on the patients with rheumatoid arthritis and lupus; however, all of the inflammatory and degenerative connective tissue disorders will be seen and reviewed. There is daily contact with several rheumatologists as well as the entire staff of the Arthritis Center at Vanderbilt Hospital (physical therapy, occupational therapy, patient educator, etc.) The student will observe patient evaluations and treatment methods and will be expected to perform some new patient assessments. At the conclusion of the elective, students will know the most practical and cost effective means of efficiently planning evaluations and treatments. This rotation is especially valuable to students considering primary care and orthopaedics.

Traumatology

Students will learn basic principles of orthopedics and traumatology, studies will include anthropometry, evaluation and registration of ROM of joints, principles of diagnostics, treatment and documentation of musculoskeletal system diseases using modern classification systems, besides that students will also learn basic principles of primary care of traumatized patients, principles of immobilization, transportation, reposition – fixation of fractured fragments (application of plaster cast and splint), methods and duration of conservative and surgical treatment of fractures. Particular emphasis will be made on sport associated trauma, traumas associated with specific types of sporting activities

Manual therapy and Acupressure

The objective of the course is to acquaint students with basics of Acupressure and Manual Therapy: primary principles and essentials. The students will get information about technical characteristics and methodical references of Acupressure and Manual Therapy, their elaboration for different diseases, combination variants with other methods of physical therapy.

Assistive Devices in Physical Rehabilitation

The objective of the course is to provide students with knowledge about physical rehabilitation of the patients with amputation, congenital absence of the extremities, congenital and acquired neuromuscular disorders, by means of prosthetics, orthotics, and appropriate walking aids

Child neurology

The aim of the Child Neurology course is to teach the child neurology with the volume which can be enough for students and to make diagnosis and differential diagnosis of main diseases and syndromes of infants, children and adults.

Speech and language therapy

The objective of the course is to acquaint students with:

- Theoretical and practical meaning of Speech–Language Disorders;
- To teach students the reasons and types of speech impairments;
- Assessment and evaluation of Speech –Language Disorders;
- Basic principles and methods of Speech-Language Therapy.

Clinical principles of physical medicine and rehabilitation

The objective of the course is to acquaint students with essence of the Physical Rehabilitation, disability and rehabilitation principles, rehabilitation process, its goals and rehabilitation modalities/methods used for restoring limited function; to teach students strategies used in the process of selection of physical agents, therapeutic exercises, assistive devices and equipment, etc. as components of rehabilitation and attributes to be considered when planning rehabilitation program; to teach bio-psycho-social approach to rehabilitation, evaluation and rehabilitative management of the patient, analysis of the consequences of diseases using International Classification of Functioning, Disability and Health; to teach maintaining documentation and medical records regarding characteristics of health and functioning, procedural interventions and outcomes.

Therapeutic exercise

The objective of the course is to acquaint students with techniques of therapeutic exercise and their use within the rehabilitation program of various diseases. Student must learn essence of each exercise and understand that by incorrect performance instead of positive effect may do harm to patient's health, as each movement and concrete exercise has

influence on the whole body, as well as on organs and systems of organs. During the course students must learn exact performance of static and dynamic exercises, and then master application of combination of different types of exercises within therapeutic exercise program in various diseases

Therapeutic massage

The objective of the “Healing massage” course is to acquaint students with methodical references, particularities and principles of using massage movements in different diseases, influence of massage therapy on the whole body and on each organs and systems, student is aware importance of massage therapy for immune mobilization and recovery to improve complex treatment with holistic methods.

Sports Medicine

The goal of the multidisciplinary academic specialty Sports Medicine is introduction to the main principles and methods of physical medicine and rehabilitation that form a basis for recovery of functional status of the body and complete or partial restoration of working capacity following various diseases and injuries. Students are acquainted with principal measures of healthy lifestyle implementation related with physical activity; they learn functional testing methods connected with graded physical exertion of healthy and diseased individuals, as well as of athletes. The crucial objective of Medical Rehabilitation and Sports Medicine is provision of students with theoretical and practical knowledge needed for prescription of movement regimen, which plays an important role for increasing working capacity and life expectancy of humans. Learning modern methods and peculiarities of investigation and treatment of athletes will enable the students to use sport properly both for recreational and treatment purposes

Adaptive physical education

The objective of the course is to acquaint students with basic conceptions of Adapted Physical Education (APE); determination of unique need.

Pumonary rehabilitation

The objective of the course is to acquaint students with methods used in Physical Medicine and Rehabilitation for management of respiratory diseases, evaluation of clinical effects of these methods, practical goals of respiratory rehabilitation program; to teach students how

to devise respiratory rehabilitation program which includes clinical assessment of the patient with respiratory diseases: conduction of functional tests of respiratory system and evaluation of the functional capacity of the cardiopulmonary system by means of exercise stress testing; to teach indications and contraindications of respiratory rehabilitation program, physical exercise selection and prescription, determination hypoxemia level during physical exercise, education of the patient regarding the disease, and rehabilitative management of the patients with different stages of respiratory diseases.

Cardiovascular rehabilitation

The objective of the course is to acquaint students with methods used in Physical Medicine and Rehabilitation for management of cardiovascular diseases, and evaluation of clinical effects of these methods; to teach students how to devise cardiovascular rehabilitation program which includes clinical assessment of the patient, cardiovascular risk stratification, indications and contraindications for cardiovascular rehabilitation, evaluation of the functional capacity of the cardiovascular system by means of exercise stress testing, physical exercise selection and prescription, education of a patient regarding the disease, and management of the different phases of cardiac rehabilitation

Physical rehabilitation in Neurology

The objective of the course is to acquaint students with basic principles of Physical Rehabilitation in central and peripheral nervous system disorders. In most of the neurological disorders, medical personnel concentrate their attention on the emergency care and treatment to cope the pathologic process, followed by subsequent treatment and rehabilitation planning. Appropriate planning and timely initiation of the rehabilitation measures are directed on improvement of quality of life of the patient that is one of the main tasks of the modern medicine. Main emphasis of the course is on the disability and deterioration of the quality of life due to common neurologic diseases, particularly stroke, traumatic brain and spinal cord injury, Parkinson disease, their etiology, clinical signs and main aspects of neurorehabilitation.

Physical rehabilitation in Pediatrics

The objective of the course is to acquaint students with methods of Physical Rehabilitation and their characteristic property in children, define motor performance in children – development of functional movement and motor control; stages of motor development: functional head control, upright trunk control, lower trunk control;

evaluation of range of motion and strength in children; effects of physical training and exercises in children and adolescents. Study course gives students an opportunity to better understanding of various causes of motor disorders in children, to utilize methods of Physical Rehabilitation in children with muscular dystrophy, to clinical evaluation of orthopedic state of a child. The course provides possibility of practical and clinical application of acquired theoretical knowledge related to scoliosis for maintenance, development and restoration of physical functioning of children.

One of the main objectives of the course is to acquaint students with application of methods of Physical Rehabilitation to various neurological disorders in children, their clinical effectiveness, practical issues of selection of specific physical agent and physical exercise in pediatric rehabilitation program.

Physical rehabilitation in Geriatrics

The objective of the course is to acquaint students with methods of Physical Medicine and Rehabilitation and their application in older patients, evaluation of clinical effects of these methods; to teach students how to devise geriatric rehabilitation program and establish supreme practical goal of geriatric rehabilitation program – prevent disability or reduce disability and maximize independence. In older people aging process is characterized as a progression from pathophysiologic changes in organs and systems of organs to impairments that cause functional limitations when older people are not able to act in normal way in their usual environment and carry out activities of daily living which lead to disability.

Students study clinical evaluation of a candidate for geriatric rehabilitation, conduct functional testing of cardiovascular and respiratory systems, evaluate conditions of musculoskeletal and neurologic system, assess basic state of physical working capacity, select and prescribe physical exercises. The course provides possibility of practical and clinical application of acquired theoretical knowledge for restoration, development and maintenance of physical functioning of the older patients.

Physical rehabilitation in traumatology & orthopedics

The objective of the course is to acquaint students with elaboration and application of rehabilitation strategy in various traumatologic and orthopedic diseases. Student must learn strategy of selection and prescription of rehabilitation measures, among them choose of physical agents, therapeutic exercises and assistive/orthotic/protective/supportive devices in patients with musculoskeletal limitation or loss of musculoskeletal function. During the course students must learn static, dynamic, passive and active exercises, their application and combination with physical agents and

assistive/orthotic/protective/supportive devices then master implementation of complex rehabilitation program in patients with musculoskeletal injuries or diseases.

Basics of scientific research

The major goals of this course for students in Medical School are to help them to gain familiarity in reading primary research literature, including utilization of statistical analyses, critical evaluation of a scientific article and principles of scientific writing, to aid the students in selection of a thesis mentor and in understanding of appropriate expectations for both mentor and mentee and to prepare them for the biomedical research phase of training. The course objective is to develop skills for physician-scientist trainees in critical evaluation of the research literature and formulating high-impact research questions. These goals will be accomplished in a casual setting through interactions faculty and lab members, consultation with faculty advisors, and primary literature discussions. The teaching is performed through lectures, seminars, problem-based small groups. Students will be assessed based upon course participation.

Basics of Psychology

The basic objective of this course is to introduce to the students psychology as a science, its research methods, main psychological subjects and their applications in the real world. Students will:

- Become familiar with current scientific theory and research in the major topic areas of psychology.
- | □ Gain understanding of the role of psychological factors in their lives and the lives of others, and an appreciation of the practical value of psychology.
- Develop skills necessary to evaluate and think critically about information concerning psychological phenomena.
- Be prepared for advanced study in psychology.

Bioethics

The core program in medical ethics is designed for the purpose of introduction for medical students into the various practical clinical problems and the decision making involving principles of medical ethics. Students are confronted with ethics of the life support and its termination, extracorporal fertilization and artificial abortion, transplantation of tissues and organs from living and dead donors, approach to HIV positive patients in the medical facilities, protection of privacy and information in modern medical settings etc. Students are invited to participate in the evaluation of

the presented cases well as decision-making concerning the treatment. Active participation of the student is encouraged through discussion and presentation of cases from medical practice.

The course is delivered by means of seminars.

Public health and sociology

This course explores the foundations of Public Health and sociology theory, practice and research,. Students are encouraged, through multiple learning methods, to develop an understanding of the conceptual, theoretical and philosophical frameworks that underpin Public Health and sociology . The course provides, also, an overview of contemporary issues in public health and sociology that are relevant to public health and sociology practice and research. Finally,the course informs students about on going public health and sociology research at the deferent countries , to assist students in identifying thesis research advisors and topics.

Informational technology

Formation of modern specialist, that must know the elements of mathematics and statistics, modeling and types of biological processes, news from the national and global information resources of Health Care, modern Information and Communication Technologies, and appropriate computer software.

History of medicine

The aim of the course is to evaluate medical science and technology through the contrasting perspective of the humanities, developing criticism in students. The basic principles of Medical history is: understanding how modern medicine was developed; applying historical models exemplifying how diseases emerge and disappear in different time periods in relation to geography, demography, wars, scientific experiments or bioterrorism; applying historical models in discussions on various types of traditional medicine and unconventional methods of healing in various periods versus classical medicine; applying historical models in training students to discuss problems of development of medical theories and practice, of public health services as well as the development of bioethical issues.

The teaching is performed through lectures, which provide necessary date in theoretical foundations and seminars, which enable interactive learning through discussions.

Georgian Language 1, 2 and 3)

Objectives of the Georgian language 1 are:

Teaching conversational Georgian language on A1 Elementary level to international students so that they could easily adapt and socialize in new environment.

Providing students with general information about uniqueness and originality of Georgian language to motivate them get better acquainted with the new culture.

The aim of the Georgian language 2 is teaching communication Georgian language on B1 Pre-intermediate level to international students so that they could adequately use it according to their everyday needs and professional activities. (e.g. For minimal communication with patients during medical practice).

The aim of the Georgian language 3 is teaching communication Georgian language on B1 Pre-intermediate level to international students so that they could adequately use it according to their everyday needs and professional activities. (e.g. For minimal communication with patients during medical practice).

Latin language

The course is designed for Professional Latin Language teaching to the students of Medical faculty. the course implies the use of Latin Language in professional medical activities. Course is focused on the study of International Medical Terminology

Elective subjects

Valeology

The objective of the course is to acquaint students with basic principles of valeology - a part of preventive medicine which aims complex study of the individual's health (mainly its socio-economic and ecological aspects) and elaborates approaches for maintenance of a healthy life style.

Biophysics of electromagnetic radiation

From humble beginnings, more than 100 years ago, EMR has become an important component of modern medicine (diagnostics and physiotherapy). Therefore, there exists an urgent need for education and better understanding with respect to its principles and applications. Also very important the biological action of ionizing radiation (IR) and non-ionizing radiation (NIR) and their applications in modern medicine. Goal of the course is also development of ability to adequately orientate in the conditions of current technological changes.

Chemical and Radiation Safety

To study the radiation and chemical safety is knowledge of the basic principles of protection against chemical and radiation exposure. Knowledge - Etiology, pathogenesis, clinics and first aid for chemical and radiation injuries. Knowledge - the use of personal protective equipment (chemical mask and protective suit). Study of radiation and chemical safety possible with knowledge of such subjects as anatomy, histology, biochemistry and biophysics

Biomechanics of treatment with water (SPA)

It is well known that physiotherapy is the most safe treatment technique the main goal of which is achievement of the best effect in treatment of certain diseases. In addition it is significant to reduce the medicine and other loads. In physiotherapy only physical and biomechanical techniques are applied. It has the history of thousands of years of experience of use of wide arsenal of treatment methods. Among them are the methods of treatment with water. Treatment with water means use of water through various techniques for medical, prevention and rehabilitation purposes. It includes hydrotherapy as well. Hydrotherapy is the treatment method based on external use of fresh water, in a form of douche, shower etc.

In physiotherapy physiological effect of water procedures is determined by the numerous and versatile receptors on the skin, subject to heat, mechanical and chemical stimulators.

Chemical and physical properties of water, like: thermal conductivity, thermal capacity, viscosity, dielectric conductivity, solubilizing ability etc. provide biomechanical and physiological basis for treatment with water. Hence, goal of the course is providing to the students knowledge about relevant laws of hydro-aerodynamics to be able to use the hydrotherapy equipment for intended purposes and safely.

Goal of the course is also development of ability to adequately orientate in the conditions of current technological changes.

Extreme Conditions Etiology, Pathogenesis and Prevention Principles

The objectives of the study course are to teach students the extreme conditions etiology, pathogenesis, immensely on the cellular, sub cellular and molecular level and on the basis of acquired knowledge, to build capacity for targeted prevention and rational treatment, as well as to improve students' readiness for future scientific-practical activities.

Occupational Diseases

- To study occupational illnesses, caused by industrial injuries
- To define etiological factors of illnesses in modern industry and agriculture
- To discuss the main principles of diagnostics of occupational pathology
- To discuss clinical definition of occupational illnesses and intoxication

Oto-rhyno-laryngology

The oto-rhyno-laryngology provides students with complete education in the comprehensive medicine and surgical care of patients with diseases and disorders of nose, throat, ear, head and neck.

Emergency management and civil protection

The aim of the study course is to Teach students the essence, classification, basic concepts and definitions of emergency situations, methods and means for civil protection; Methods of emergency situation assessment; organization and management of rescue activities and urgent medical assistance; Basics of medical infrastructure stable functioning; rules of practical implementation of civil protection activities.

Rehabilitation principles of cerebral palsy

The objective of the course is to acquaint students with methods used in Physical Medicine and Rehabilitation for management of Cerebral Palsy, and evaluation of clinical effects of these methods; to teach students how to devise cerebral palsy rehabilitation program which includes clinical assessment of the patient, risk factors, secondary impairments, indications and contraindications for physical therapy, evaluation of the functional capacity of the skeletal and muscular systems, physical exercise selection and prescription, education of a patient regarding the disease, and management of the different phases of rehabilitation

Acupuncture and reflexotherapy

The objective of the course is to acquaint students with basics of acupuncture and reflexotherapy: primary principles and essentials. The students will get information about technical characteristics and methodical references of acupuncture and reflexotherapy, their elaboration for different diseases, combination variants with other methods of physical therapy.

Introduction in occupational therapy

The objective of the course is to introduce Occupational Therapy as one of the health care profession, to get understanding of interdependence of the occupation, health and wellbeing, to get acquaint students with history, philosophy and practice models of Occupational Therapy; to use properly terms and concepts of Occupational Therapy.

Sports massage

The objective of the sports massage course is to acquaint students with specifically selected massage methods which provide maintenance of muscle tone in athletes, their preparedness to intensive physical training, taking off weariness and fatigue, and quick recovery after heavy physical

Resort management

Objective of the educational course is to teach students history and development of resort industry, connection between natural resources and recreational objects, determination of guests of resorts, development of strategy of comfort, principles of description of arrangement and development of different thematic resorts, in accordance with competence – participation in planning of guest's activity.

The Departments involved in the learning process

FACULTY OF MEDICINE

1. The Department of Human Anatomy
2. The Department of Histology, Cytology and Embryology
3. The Department of Pharmacology
4. The Department of History of Medicine and Bioethics
5. The Department of Psychology
6. The Department of Pathophysiology
7. The Direction of Pathology
8. The Department of Microbiology
9. The Department of Internal Medicine # 3
10. The Department of Dermatology and Venerology
11. The Department of Surgery # 2
12. The Department of Surgery # 3
13. The Department of Eye Diseases
14. The Department of Oto-rhyno-laryngology
15. The Department of reproductive medicine
16. The Department of Propedeutcs of Neural Diseases and Topical Diagnostics
17. The Department of Clinical Neurology
18. The Department of Pediatrics # 1
19. The Department of Pediatrics # 4
20. The Department of Child Neurology
21. The Direction of Radiology

FACULTY OF PGARMACY

22. The Department of Medical Chemistry
23. The Department of Biochemistry

FACULTY OF PUBLIC HEALTH

24. The Department of Management, Politics and economy of the Public Health
25. The Department of Hygiene and Medical Ecology

FACULTY OF PHYSICAL MEDICINE AND REHABILITATION

26. The Department of Physics, Biophysics, Biomechanics and Informational Technologies
27. The Department of Physiology
28. The Department of Medical Biology and Parasitology
29. The Department of General Therapy
30. The Department of Traumatology and Orthopedics
31. The Department of Medical Rehabilitation and Sport Medicine
32. The Department of Laboratory medicine
33. The Department of Physical medicine
34. The Department of Physiotherapy and Balneology

35. The Department of Medical tourism

CENTERS

- 36. Center of Foreign Languages
- 37. Center of Georgian Language
- 38. Center of scientific skills