School of Medicine

Curriculum

Title of the Program
Undergraduate MD (Medical Doctor) program
Cycle
One-Cycle (Equal to Master degree) - VII Level
Qualification
Medical doctor /MD
Program Leader
Professor Shorena Tukvadze, MD, PhD Qualifications, scientific and scholarly activities of the program leader is available in the attached documentation. **George Gabisonia – Assistant**
Program scope and description
Undergraduate MD programme is based on ETCS system. It is student oriented and is based on the academic workload needed for student to achieve to goals of the programme. Undergraduate Medical Doctor programmes duration is 6 years (12 semesters) and it consists of 360 credits (ETC). 1 ETC credit equals 30 astronomical hours. During one semester student must accomplish 30 Credits, (30 Credits=900 Hours) and 60 Credits per academic year Depending on the student's individual workload, the number of credits per year may be less than 60 credits or more, but the total amount of credits taken by the student over the 60 credits count, during the whole period of study on one step medical programme as established by Georgian regulations (Medicine Sectors benchmarks for higher education), must not exceed 15 Credits. The student workload in the programme includes contact and independent work and includes: Total Hours - 10800 Independent Hours - 5023 Contact hours Total - 5206 Lecture hours - 837

Seminar/practical work hours - 4369
Assessment - 571

Program consists of 4 phases:

Phase I – "From Cell to Body" (I-II yrs)
The foundation Phase covers fundamental concepts about the structure and function of human body, main concepts of biomedical sciences. During the first two years of study students will start learning with Introduction to structure of Human Body, Gene, Cell and Tissue, Scientific reasoning, Clinical and Professional Skills (Communication and Procedural skills, Medical Ethics). These integrated modules will be taught using different teaching methods (interactive lectures, role playing, practical work, working in simulation Lab, etc). Students learn key practical skills (interviewing patients) in clinical settings. Simulation engages students in experiential learning; students use virtual dissection to investigate regional anatomy of clinical cases, and manage high-fidelity mannequin case scenarios related to the regional anatomy. PBL (problem-based learning) sessions are delivered as longitudinal course for 2nd year students.

Phase II – Mechanisms of Health and Disease (III yr)
During the second Phase (preclinical year) the main emphasis is placed on Introduction to Clinical Medicine (Physical Diagnosis and Clinical Skills), basic Pathology and Pharmacology. This Phase focuses on the most common symptoms and signs of diseases that best illustrate basic principles. Students start mastering in physical diagnosis. This year students are trained in diagnostic thinking through case-based discussions related to different topics of medicine, integrating their knowledge and preparing for understanding clinical subjects next years. In Professional Development longitudinal module, they are engaged in clinical problem solving using different clinical scenarios (clinical reasoning course) emphasizing thoughtful analysis and synthesis of information and its clinical application.

Phase III - "Clinical Medicine"(IV-V yrs)
During 4th and 5th years students learn main clinical subjects (clinical rotations) - Internal Medicine (system-based), Surgery, Obstetrics and Gynecology, Emergency Medicine, Pediatrics, Psychiatry, Radiology, ENT, etc. In parallel they are continuously trained Clinical and Professional Skills comprising professional behavior in Clinical Skills Lab and clinical settings. These modules are taught in clinical settings (Ambulatory settings and in Hospitals). At the end of each clerkship students pass integrated exam (OSCE).

Phase IV – "Preparing for Practice" (VI yr)
Year 6 (graduation) - during graduating year students have clinical attachments mastering and gaining necessary competencies. According to integration principles and spiral curriculum requirements they

revisit basic subjects (Clinical Pharmacology and Medical Genetics). Students work in small groups and are assigned to a variety clinical activity in various inpatient and outpatient settings oriented to prepare graduating students to their future specialization in residency. By the end of the year students pass final integrated exam (OSCE).

MD programme mandatory credits - 336 ECTS
MD programme elective credits - 24 ECTS

Language of instruction

English

Program Goals

The aim of the programme is to raise a medical professional in accordance to modern standards, which will be able to apply principles of evidence based medicine in practice, use relevantly principles of ethics, research and communication in practice; and be able to establish self and continue development within constantly changing professional environment.

Enrolment Requirements

All student candidates are eligible to enroll in the program by passing Uniform National Entrance/General Graduate Examinations. In addition, based on Georgian legislation, Georgian citizens and citizens of foreign countries can apply who have received complete general education or its equivalent abroad.

To be enrolled in the program student candidates should know foreign language (English) on B2 level and should pass foreign language (English) exam of Uniform National Entrance/General Graduate Examinations. All student candidates who are enrolling without Uniform National Entrance/General Graduate Examinations should have the documents/certificate which proves knowledge of English on B2 level.

Prospective student number

100

Sphere of Employment

According to Georgia current legislation, a graduate of one cycle MD programme is not allowed to run the independent medical practice, she/he can get be employed as a junior doctor, implying performing the duties of a doctor according to the instructions and under the supervision of an independent medical practitioner (The Law of Georgia on Medical Practice, Article5). A graduate holding a higher medical institution diploma have the right to: a) complete postgraduate training programme (residency) to acquire the right to perform an independent medical practice after passing a state certification examination; b) carry out research (Master, PhD) and teaching activities in the theoretical fields of

medicine, or other fields of health care that do not imply an independent medical practice (The Law of Georgia on Medical Activity, Article 17).

Learning Outcomes/Competencies

Competencies/Learning Outcomes	Generic Competencies
Knowledge and Understanding	The graduates will be able to: • Demonstrate comprehensive knowledge of the field-specific subjects, theoretical principles and reasearch methodology used in the medicine; • Critical approach to new information; • Analyze and integrate different information and make relevant conclusions that serves as a basis for further self-development.
Skills	The graduates will possess the following skills: • Ability to resolve complex problems in multidisciplinary team using the latest information; • Conducting research using appropriate and updated methodology; • Usage collected information in his/her professional activities; • Time-management skills - effectively plan the resources related to expected activities and to be responsible for the work done; • Usage the full spectrum of education and information resources; • Participate in meetings and communicate own opinions verbally and in writing; • Following the ethical and legal principles in the context of medicine, be able to protect the rights of the patient; • Conduct negotiations within a professional context and participate in conflict resolution with any person, regardless of its social, cultural, religious or ethnic background; • Communication with the colleagues and patients following the principles of justice, social and democratic values.
	The graduates will be able to: • Adaptinng working in a team

Responsibility and Autonomy	• Effectively plan the resourses related to expected activities; • To be responsible for the work done; • Understand the neccesity of staying up-to-date with self-learning; • Ability to lead a team as well as professional subordination/adatation and utilization of new knowledge.
	Field-specific competencies
1. Field knowledge	• Comprehensive knowledge of biomedical, clinical and social sciences; • Comprehensive knowledge of principles of diagnosis and treatment; • Deep knowledge of health promotion and disease prevention; • Deep knowledge of behavioral sciences and medical ethics.
2. Consulting patients	• Taking patient's history; • Performing physical examination; • Assessment patient's mental status; • Making appropriate clinical decisions; • Providing relevant explanation, support and advice.
3. Assess clinical presentations, order investigations, make differential diagnoses, and negotiate a management plan	• Recognize and assess the severity of clinical presentations; • Order appropriate investigations and interpret the results; • Make differential diagnosis; • Demonstrate effective clinical problem solving and judgement to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plan; • Negotiate an appropriate management plan with patients and their family members; • Provide care of a dying patient and his family members; • Manage chronic illness; Consider the patients' age, the nature of chronic disease, psychological impact, appropriate use of drugs in relevant way while managing the chronic diseases. • Identifying and assessing the emergency medical conditions;

4. Providing first aid in emergency medical situations	• Treatment of emergency medical conditions; • Providing basic first aid; age peculiarities in newborns and children; • Conducting the basic life support and cardiopulmonary resuscitation activities in compliance with current guidelines; • Provide advanced life support according to current guidelines; • Conducting the activities for enhance lifetime maintenance in accordance with the guidelines; • Treatment traumas according to current guidelines.
5. Drug prescription	• Prescribe drugs clearly and properly with consideration of patient's age; • Match appropriate drugs with clinical context; • Review appropriateness of drugs and other therapies and evaluate potential benefits and risks for the patient; • Provide patients with appropriate information about their medicines. • Treat pain and distress; • Consider compatibility of drugs before initiation of treatment; • Detect and report possible drug-drug interactions and adverse drug reactions.
6. Performing Practical Procedures	• Vital Signs: Pulse, respiration, temperature; • Measure Blood pressure; • Venipuncture (using simulator); • Venous Catheterization (using simulator); • Drug injection into the vein and us of infusion device (using simulator) • Subcutaneous and intramuscular injection (using simulator or giving to patient under supervision); • Oxygen therapy; • Patient Transportation and Treatment; • Suturing (using simulator); • Urinary Catheterization (using simulator) • Urinalysis (Screening Tests–Dipstick); • Electrocardiography; • Electrocardiography Interpretation; • Performing Respiratory Function Test.

7. Communicate effectively in a medical context	• Communicate with patient; • Communicate with colleagues; • Communicate in breaking bad news; • Communicate with patient's relatives; • Communicate with disabled peoples; • Communication in seeking informed consent; • Written communication (Including the medical records); • Communicate in dealing with aggression; • Communicate with those who require an interpreter; • Communicate with law enforcement agencies and mass media; • communicate with any person regardless of his/her social, cultural, religious and ethnic background; • Use patient-centred interviewing skills to effectively gather relevant biomedical and psychosocial information; • Use communication skills and strategies that help patients and theirmfamilies make informed decisions regarding their health.
8. The use of Ethical and Legal Principles in Medical Practice	• Maintain confidentiality; • Apply ethical principles and analytical skills to clinical care; • Obtain and record informed consent; • Issuing death certificate; • Requiring autopsy (in compliance with the Georgian Legislation); • Apply Georgian and international legislation during treatment; • Conducting medical practice in multi-cultural environment; • Respect the rights and dignity of patients, including the right of participation in decision making regarding the medical aid.
9. Evaluation of psychological and social aspects regarding patients' disease.	• Evaluating the psychological factors of disease detection and impacts on the patients; • Evaluating the social factors of disease detection and impacts on the patients; • Recognition of the stress related to disease; • Recognition of the drug and alcohol abuse;

	• Demonstrating the patient oriented skills while interviewing for gathering the psychosocial and biomedical information • Considering the patients' nonverbal behaviors for detecting the psychosocial factors related to the disease.
10. The use of knowledge, skills and principles based on evidence-based medicine	• Apply evidence in practice; • Carry out an appropriate literature search; • Critical analysis of the published literature, making conclusion and using them in practice; • The active use of evidences obtained through different literature sources and making the conclusions regarding the health conditions of patient on the basis of assessing the level of evidence.
11. Use information and information technology effectively in a medical context	• Keep accurate and complete clinical records • Use information technology in medical practice • Access specific information sources; • Store and retrieve information; • Keep personal records (portfolio); • Follow the requirements of confidentiality and data protection legislation; • Apply the principles, methods and knowledge of health informatics to medical practice.
12. Ability to apply scientific principles, methods and knowledge to medical practice and research	• Knowledge of research methodology; • Research designing, planning, result processing and conclusion-making skills; • Ability to use the achievements of biomedicine in practice; • Report/review writing skills based on critical analysis of the research literature in biomedicine; • The awareness of ethics of conducting scientific research. • Conducting the treatment that minimizes the risk of damage to the patient;
13.Implementation of health promoting events, engage with public health care issues, efficient performance within the health care system	• Implement measures for the prevention of infection spread; • Understanding ones' own health problems and evaluating ones' own health with regard to professional responsibilities; • Participation in health promotion events both on individual and population-wide level; • Demonstrating the leadership skills for the improvement of healthcare system;

	• Facilitating the changes in healthcare system for strengthening the services and improving the results; • Working with patients and their families for enhancing the healthy behaviors • Contributing to the improvement of community and population health.
14. Professionalism	*Professional attributes* • Probity, honesty, ethical commitment • Commitment to maintaining good practice, concern for quality • Critical and self-critical abilities, reflective practice • Empathy • Creativity • Initiative, will to succeed • Interpersonal skills • Leadership skills *Professional working* • Ability to recognize limits and ask for help • Ability to work autonomously when necessary • Ability to solve problems • Ability to make decisions • Ability to work in a multidisciplinary team • Ability to communicate with experts in other disciplines • Ability to lead others • Capacity to adapt to new situations • Capacity for organisation and planning (including time management) *The doctor as expert* • Capacity for analysis and synthesis • Capacity to learn (including lifelong self-directed learning) • Capacity for applying knowledge in practice • Ability to teach others • Research skills *The global doctor* • Appreciation of diversity and multiculturality • Understanding of cultures and customs of other countries • Ability to work in an international context • Knowledge of a second language • General knowledge outside medicine

Methods for achievement of education purposes

☒ lecture ☐ working in groups ☒ seminar ☒ practical work
☒ e-learning ☐ other

Student oriented teaching method assures students' active involvement in the study process. Teaching methods include the case-based teaching, discussions, seminars and projects. The following methods are used during the education process:

Interactive lectures - is a creative process where a lecturer and a student take part simultaneously. The main aim of the lecture is to understand the idea of subject to be learned what implies a creative and active perception of the presented material. In addition, an attention should be paid to the basic thesis of the material, definitions, indications, assumptions. Critical analysis of main issues, facts and ideas are necessary. A lecture provides logically consistent acknowledgement of main thesis of the discipline to be learned. It is based on students' free-thinking ability in the particular environment and understanding of the basic scientific problems.

Seminar / Group (team) work - implies dividing a group into teams and preparing verbal presentations on the indicated issues or papering questions for each other and answering them orally by a speaker. Gradual study of theoretical knowledge uses theoretical materials independently to solve specific problems. Students independent work with computer, simulators and manikins. Group work might also include discussion on the given topics

Laboratory work - is more demonstrative and gives better visualization opportunity of the process. Student learns experimental setup, must acquire use and regulation of lab devices. Lab gives opportunity to comprehend theoretical material given during the lecture. Implicates following activities: experimental ets, video and motional data demonstration etc. during this process knowledge of covered material is assessed

Learning at simulation training class using simulators and manikins - can be the way to develop health professionals' knowledge, skills, and attitudes, whilst protecting patients from unnecessary risks. Simulation-based medical education can be a platform, which provides a valuable tool in learning to mitigate ethical tensions and resolve practical dilemmas.

Practical work -. It helps to demonstrate and comprehend theoretical knowledge acquired in lecture and may include following activities:

- Demonstration of Practical skills – demonstration/observation of learning samples, conduction operation, which gives opportunity to perceive organs topography accurately, physical examination of the patient, assessment of examination results, data registration, performing manipulations, instrumental examinations and result analysis (interpretation of conclusions and grade assessment of lesion/damage), analysis of laboratory results – supports elaboration of result analysis and synthesis
- Case study –This is based on the discussion of specific cases. "Case" is so called instrument, which enables to use theoretical knowledge to solve practical cases. The combination of theory and practice, the method develops the decision-making skills within time limits. Student develops analytical skills, group work, alternative reasoning, planning activities and projecting results.
- Role-playing games - It's a system is made up of material and imaginary factors that create the most relevant to the reality environment in which students solve problems within their role. This method develops: the ability to assess their capabilities; the ability to apply theoretical knowledge in practice; the ability to make the right decisions in emergency situations; the ability to use an adequate method to assess and solve a problem or set of problems; the ability to understand professional values and work with these values.

Clinical Practice/ Bedside teaching, clerkship is the important part of the learning process and consists of planed and intended activity of student. It provides practical skills and strengthening of academic theoretical knowledge. This method prepares student for future professional activity. There are three parts involved in "clinical practice" – University, student, and potential employer/practice facility. Therefore, it is important for all three parts: communication of academic education and theory to real world. It helps to develop new competences, renewal of educational programs according to the requirements of changing market.

Discussion – collaborative exchange of ideas among a teacher and students or among students for the purpose of furthering students thinking, learning, problem solving, understanding, or literary appreciation. Participants present multiple points of view, respond to the ideas of others, and reflect on their own ideas in an effort to build their knowledge, understanding, or interpretation of the matter at hand. Discussions may occur among members of a small group, or whole class and be teacher-led or student-led.

Debate – requires students to work as individuals and as a team to research critical issues, prepare and present a logical argument, actively listen to various perspectives, differentiate between subjective and

objective information, ask cogent questions, integrate relevant information, develop empathy, and formulate their own opinions based on evidence.

Verbal presentation – demonstration of knowledge of theoretical topics, discussion over specific issues in the form of narration or answering questions.

Presentation- Each student shall prepare a presentation and report it in the group. The presentation shows the student's knowledge and gained skills during the course. It may be prepared individually or in a group work. The aim of the project is to skill students in searching and processing the relevant references, make them develop own point of view concerning the issue.

Quiz – written task, – checking the knowledge of studied theoretical topics and skills of integration of the knowledge.

PBL - Problem-based learning sessions - is a learning method based on the principle of using problems as a starting point for the acquisition and integration of new knowledge. It is the process of acquiring new knowledge based on recognition of a need to learn. PBL is a student-centered learning method that involves discussions among students who resolve loosely structured problems to facilitate learning. The method not only facilitates the acquisition of knowledge but also that of other generic desirable attributes such as effective communication skills, ability to work in a team (teamwork), problem-solving skills, self-directed learning ability, ability to share information, appreciate other points of view and identification of personal strengths and weak-nesses. It enhances critical appraisal, literature retrieval and encourages ongoing learning within a team environment.

CBL - case based learning - is an active problem analysis method, the aim of method is teaching on the bases of specific examples (case analysis). This group work is based on the discussion of specific complicated/atypical cases, which may need search for additional information, diagnostic differentiation and determination. "Case" is so called instrument, which enables to use theoretical knowledge to solve practical cases. The combination of theory and practice, the method supports development of analytical and clinical reasoning, analysis and synthesis skills, working in group and decision making abilities. Students develop abilities to participate in medical discussions, and effective communication with colleagues in medical context within time limits. Student develops analytical skills, group work, alternative reasoning, planning activities and projecting results.

Involvement in scientific research –The educational research is important for the students to improve research skills. Participating in the scientific research helps in improving those individuals who really

wish to bring improvement in those practices. This way educational practice helps in overall improvement of the individual scientific principles.

Evaluation system

Student can accumulate credits during the learning course only in case of successful completion of work determined by the syllabus and receipt of the positive evaluation, considered by Georgian legislation.

Students should have minimum of 25 points (total score before final exam) to be allowed to pass final exam.
Minimum score for final exam is 16 points.

Maximum evaluation of the course is 100 points.
Students' evaluation is determined according of the following system and quantitative indicators.
Positive evaluations:
(A) Excellent – outstanding performance with only minor errors, 91-100 points;
(B) Very good –above the average standard but with some errors, 81-90 points;
(C) Good –generally sound work with a number of notable errors, 71-80 points;
(D) Average – fair but with significant shortcomings, 61-70 points;
(E) Poor –performance meets the minimum criteria, 51-60 points.
Negative evaluations:
(FX) Fail – some more work required before the credit can be awarded, 41-50 points
(F) Fail – considerable further work is required.
(FX) Fail – student with negative evaluation has right to pass the repeated final exam.
(F) Fail – student with this negative evaluation is obliged to pass the teaching course again.

Student evaluation is a continuous process during the whole semester; accordingly, the final evaluation is a sum of midterm(s) and final evaluations.
Point of the final exam is 40, midterm evaluation points are 60 and it is divided accordingly to evaluation components.
In semester's assessment should be taken into account medium term exam's score, which is assessed by score 20;
The rest 40 scores of semesters comprise several rests, seminars, practical activities, conducted by professor in accordance with syllabus.;
Additional final exam for the student should be in the same semester, not less than 5 days interval with previous exam;
To identify the final rating of student and to encourage them, at the end of semesters are calculated ratings of student's base on GPA (Grade Point Average).

GPA is equal to credits multiplied by scores received during semester in all the courses passed and the divided to the number of accumulated credits.

Various methods oriented on the demonstration of the study results are deemed suitable for the assessment:
Essay evaluates the level of insight of the reviewed issue. It also generally demonstrates an ability to argumentatively discuss an issue and demonstrate a critical thinking ability
Quiz/Test/Combined Test/Questionnaire provides blitz information about the gained knowledge in relation to a certain topic.
Case/situation-based task conveys the skill of applying knowledge in practice and finding the way of solving posed problems.
Oral Presentation, Power Point Presentation ensures versatile information about the quality of understanding of the presented material and diligence of a student as well as his/her skill to interact with audience.
Laboratory work – student can fulfill the assigned laboratory work independently, with expression of thorough knowledge of laboratory techniques.
Discussion – this method is used to assess the skills of logical argumentation, ability to differentiate between subjective and objective information, integrate relevant information and formulate their own opinions based on evidence.
Role-playing games / simulation task - the method determines how correctly the student's task is to take into account the context of the quasi-case situation and its role. Does it make a rational decision to solve the problem - uses standard and / or outstanding methods.
Analysis of clinical, instrumental and laboratory data ensures efficient assessment of the following skills: collection of anamnesis, physical examination, data registration, instrumental examination data and laboratory test reading and interpretation, diagnosis definition and differential diagnosis, elaboration of a treatment plan.
Demonstration of practical/ Clinical skills ensures efficient assessment of the following skills: physical examination of a patient, formulation of survey data and registration, manipulations and a doctor's assistance, analysis of instrumental and laboratory test results.
Problem solving ensures efficient assessment of a student's contribution to the discussions, such as statements, ideas and questions, contribution to a creative "brainstorm", problem-solving skills, self-directed learning ability, ability to share information.
Clinical reasoning/Case Analysis – this type of assessment emphasizes the following elements of a candidate: clinical judgment, the ability to reason, the ability to apply theoretical knowledge into practice, the ability to interpret examination results and define diagnosis correctly.
The Objective Structured Clinical Examination (OSCE) is an assessment method based on students' performance that measures their clinical competence. Students are introduced to different medical scenarios through a series of Patient Station. The assessment emphasizes the following elements of the

candidate: clinical judgment, clinical skills, ability to reason, as well as problem solving, communication skills including behavior towards the patient, linguistic dissemination and perceptiveness.
Midterm Exam is the element of midterm assessment held once in a term at the end of the second five-week period in the form/method defined in the curriculum. It aims at measuring the gained knowledge and skills of the covered material.
Final Exam is the component of the final assessment held once a term in order to evaluate the obtained knowledge and skills in the form/method defined in the curriculum.

Material and technical resources, essential for program implementation

Material resources:

- Space in accordance with law;
- Rooms, conference halls, working rooms, administrative staff rooms;
- Permanent electric supply;
- Toilets;
- Natural light;
- Heating system;
- Fire suppression safety system;
- Evacuation plan;
- Emergency assistance (medical office);
- University security:
- Enough PCs and internet;
- Library with necessary resources.

Human resources:

- Academic personnel, in accordance with Georgian legislation and relevant skills;
- Researchers and teachers, invited as practitioners and research degree holders in the fields.

Annex 1: Programme description and Outcome map

Annex 2: CV – Shorena Tukvadze, MD, PhD