



TBILISI MEDICAL ACADEMY
MEDICINE STARTS HERE

PETRE SHOTADZE
TBILISI MEDICAL ACADEMY

One-Step Educational Programme Description

Medicine

2021-2022
Academy Year

Table of Contents

Contact	3
The Academic Calendar for 2021-2022	4
Fall Semester	4
Spring Semester:	4
General Information	5
Mission	5
Aim.....	5
Objectives.....	5
Educational program.....	6
Admission.....	6
Goal	6
Methods for achieving the goals.....	8
Educational plan	11
Student's evaluation system.....	15
The Program Outcomes/Competencies.....	15
Technical and Human Resources	23
The opportunities for the continuation of study.....	23
Future employment.....	23
Information for Incoming Students.....	23
Accommodation	23
Health Insurance	23
Contact	

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The Academic Calendar for 2020-2021

Fall Semester:	
Lecture period	20 September 2021 - 15 January 2022
Exam period	
Middle exam period	8 November 2021- 13 November 2022
Final exam period	17 January 2022 - 12 February 2022

Spring Semester:	
Lecture period	28 February 2022 – 23 June 2022
Exam period	
Middle exam period	18 April 2022 – 27 April 2022
Final exam period	27 June 2022 – 23 July 2022

General Information

TMA is one of first private medical educational institutions in Georgia, which was established by famous Georgian doctor, Prof. Petre Shotadze in 1992. Paramount priority of TMA, since its establishment, is sustainable development, thus year after year, TMA aspires to implement and exercise international standards within processes of teaching, study and research.

More than 2500 TMA graduates are leading successful careers at leading hospitals, scientific-research institutions and healthcare organizations on local, as well as international level.

Tbilisi Medical Academy is actively involved in various international exchange programmes, which provide successful students with opportunities to spend part of their studies at various international universities and obtain priceless experience for further development into international standard professionals.

TMA is recognized and listed by international organizations:

- An International Association for Medical Education (AMEE)
- European Medical Students Association (EMSA)
- International Directory of Medical Education (FAIMER)
- World Health Organization – (WHO AVICENNA)
- Association of Medical Schools in Europe (AMS E)
- Educational Commission for Foreign Medical Graduates (ECMG)

Currently TMA successfully runs two one-step educational programmes – (Medicine - taught language Georgian and Medicine – taught language English) as well as residency programmes of postgraduate education. The content and teaching level of TMA educational programs corresponds to the International standards, which promotes the mobility of young people and gives them the opportunity to continue their studies and increase their knowledge in the higher institutions of foreign countries.

Mission

TMA, as a student-oriented higher education institution, primarily seeks to teach and develop national and international healthcare professionals in an innovative manner by using evidence-based knowledge, whilst practically benefiting the community in Georgia through research-based outreach activities.

Educational program

Program Description	One-step educational program – Medicine
Level	One-step educational program is equals to the second stage of higher academic education
Duration of the program	6 year, 12 Semester
Number of Credits (ECTS)	
1 Credit	30 hour
Semester	30 Credit
Year	60 Credit
Total	360 Credit
Degree	Medical Doctor
Language of instruction	Georgian

The program is divided into three parts:

I Part	Basic Subjects	2.5 – 3 Years
II Part	Clinical Subjects	3 – 5 Years
III Part	General Specialization	6th Year

Admission Criteria

Citizens of Georgia with general secondary education are admitted to One-Step Educational Program – Medicine (taught language English) based on results of Unified National Examinations, including following subjects: Georgian Language, English Language and Biology -obligatory and one of the following electives: chemistry/physics/mathematics.

Citizens of foreign countries or citizens of Georgia living abroad, with secondary education are admitted to the program, in accordance to acting legislation of Ministry of Education and Science of Georgia, bypassing Unified National Examinations. Admission procedure is conducted through demonstrating evidence of English proficiency, equal to B2 level (Common European Framework of Reference for Languages: Learning, Teaching, Assessment), proven by valid language certificate, English-taught secondary education certificate or results of TMA internal English language examination, skype interview. Applicants with general secondary education must demonstrate transcripts with Natural Science profiles (biology, chemistry, physics)

The Aim of the Program

Is to raise Medical Doctors, through developing and strengthening among them the roles and competencies of physician in society: empowering them with international standard up-to-date evidence-based knowledge, raising awareness regarding public health care systems and role of a doctor within; elaborating clinical,

communication and research skills and fostering among them highest ethical values and attitude required for medical practice, enable them to become self-reflective professionals, motivated for life-long learning.

Objectives of the Programme:

1. **To teach students Mechanisms and Treatment of Disease:** To give evidence based, modern knowledge at the molecular, cellular, organ-system , whole body and societal level of norm and pathology and integrate this knowledge with clinical science and skills to diagnose and treat disease.
2. **To enable students to perform Clinical Reasoning:** to promote clinical judgment based on application of knowledge - a thorough understanding of the clinical problem, application of scientific and societal principles, and knowledge of the health care systems.
3. **To make students to elaborate clinical skills for Patient Care:** to empower students with competencies related to consultation of patient and management of clinical case, practical procedures and delivery of emergency care; to facilitate adoption of principles of safety and quality of patient-centered holistic care.
4. **To empower students with professionalism** - to facilitate elaboration of respectful and ethical behavior in students in all professional interactions by theoretical teaching, medical practice and self-reflection to provide compassionate, empathic and patient-centered care to patients and families. To develop self-reflection skills for continuous personal and professional development -to motivate students for life-long learning. To develop Critical thinking, management and leadership skills to enable students to make decisions in any complex situation in national and international context.
5. **To equip students with effective communication skills-** to teach communication with patient and family in empathic manner, interpersonal skills; to enable them to communicate effectively with colleges and other healthcare providers, academic society, media and legal authorities in oral, written and electronic form.
6. **To teach basic principles and organization of health care systems in terms of epidemiology, health promotion and disease prevention:** to facilitate application of scientific knowledge and use of clinical skills and attitudes by students to promote health and prevent disease in individuals and communities; to enable them to meet society needs in terms to provide safe, high quality and cost-efficient patient-centered care including palliative and terminal care and management of chronic diseases.
7. **To rise “social agents” with awareness of responsibility to society:** to prepare students to practice medicine with competence of cultural, social and ecological accountability to serve needs of society with diverse populations and economical constraints. To give students good knowledge of structure and organization of healthcare systems in terms of first-line, second and third-line hospitals and role of general practitioner as a gate keeper in it; to give them awareness of social determinants of diversity, goal oriented care(multi morbidity); enable them to accept and apply the principles of patient safety and quality of care, give insight of aspects of global health care and make them to feel responsible and accountable for individual patient and family as well as for the whole population.
8. **To enable students to create and disseminate the new knowledge:** to facilitate students' critical thinking and creativity, promote use of evidence-based medicine principles. To teach students scientific approach to medicine, use of scientific methodology, research skills and ethics; empower them with competence to create and communicate new knowledge - to perform research projects guided by academic staff and write essays.
9. **To promote and teach team working and collaboration:** to give students competence to work effectively with colleagues and other healthcare providers (interprofessional attitude)- to enable them with interpersonal skills and competence to perform teamwork: share and manage responsibilities and workload.

Means/Methods/Formats to achieve Learning Outcomes:

Teaching formats:

- **Lecture** – is used on the basic level of study-during first 3 years, it is interactive and is conducted in relatively small groups(max.30-40students) ,
- **Seminar** – is used for consideration and interactive discussion of theoretical issues
- **Practical work** – implies practicing in practical application of knowledge in terms of clinical reasoning(clinical case discussion), performing communication with patient, physical examination of patient, practical procedures.
- **Lab.work**-observing and performing lab. work in basic and clinical disciplines
- **Active learning:** CBCR, TBL, CBL
- **Clinical Clerkships** – 4-5th years – are conducted in TMA affiliated clinics, students communicate and examine real patients under supervision; during clerkships teaching of clinical skills on SP and manikins are performed at TMA clinical Skills Center.
- **Clinical rotations** – 6th year of study- are conducted in TMA affiliated clinics, students communicate and examine real patients independently, during rotations some clinical skills teaching is performed at TMA Clinical Skills Center.

Theoretical Methods:

- **Verbal Method** – during study process, one of key forms of interacting with students is verbal method, which includes forms like: interactive lecture using power-point presentations, group working, seminars, practical sessions, poster presentations, Q&A (Question and answer) sessions and individual work with student, around subject of student's interest. In itself, individual work with student presumes head to head consultation upon necessity, among them: further clarification of material, (which is interesting, yet unclear for student) feedback on examinations or any other assessment results, guidance while selecting literature for research project or its' analysis as well as supervising student's preparation for scientific conferences or student debates.
- **Working with Textbook** – considers student's independent work on preliminarily explained material, through self-directed studying, processing and analyzing of textbook materials.
- **Written Assignments** – range of subjects at TMA are considering completion of various written assignments: essays, open text question assignments and Power-point presentations, lab. work protocol, patient reports, case studies, medical recordings, reflections, etc.

Practical Methods

- **Bedside Teaching** – implies opportunity for students to be observed and given immediate feedback for improvement of clinical skills and professional behavior when working with real patient in authentic environment under supervision. Among other advantages of this method, bedside teaching is a clear demonstration of clinical skills for a student, which gives opportunity to observe application of theoretical knowledge to a real-life situation as well as to give immediate oral feedback and coaching when student performs clinical skill and communication with patient. Through the method students also acquire new knowledge, practical skills and awareness towards medical professionalism. Moreover, through bedside teaching are elaborated key professional qualities like collegiality, assertiveness and commitment to teamwork. Demonstration of practical skills may include following key points: taking

patient history, physical examination of patient, registration of findings, ordering relevant investigations and laboratory tests, interpreting examination/lab test results, (determining type and grade of lesion, analysis of lab tests etc.) making differential diagnosis, making diagnosis, creating management plan and exercising appropriate communication with patients or their caretakers.

- **Demonstration method** – considers visualization of information and practical skills. This method is used at the Clinical Skills and Objective Structured Clinical Examination Centre, in terms of teaching practical procedures on manikins and patient examination on **SP**. (Standardized Patient). Demonstration can be carried out by teaching staff, as well as by student.
- **Role Play** – method considers application of different roles, mainly roles of doctor and patient and elaboration of practical/clinical skills through their interpretation. Role play is widely used on the basic level of education, for optimal explanation and demonstration of practical skills, as well as during OSCE examination, where SP scenarios are applied.
- **Analysis and Synthesis** – considers discussion of clinical cases, including critical analysis and synthesis of findings, obtained through physical, instrumental and laboratory examinations, carrying out and stating differential diagnosis, elaboration of relevant and appropriate management plan. **Analysis** – this method considers discussion of specific cases with students. Thus, students have opportunities to explore and approach matters from different angles, extending sightseeing and critical thinking abilities. Through this method is possible to put complex study material into rather simple components, which remarkably simplifies detailed coverage of given information. Students have to rule out which diseases are life threatening and need direct referral, they have to learn that not all differential diagnosis are equally important. **Synthesis** – method implies summarization of separate issues, questions or various considerations into one point. Method is used to elaborate among students' necessary skills for assessing issues as a whole – to put together all data in relation of patient –anamnesis, physical findings, laboratory data, social, occupational, ecological factors for getting to threshold for action- to identify emergency situation and make prompt and proper referral, as well as to elaborate management plan for treatment, prevention and monitoring.
- **Discussion/Debates** – there is no doubt, that process of discussion regarding specified topic, significantly enhances the quality and activity of students' involvement within process, as well as increases students' abstract thinking abilities and helps them to exercise various points of view, though logical argumentation. In addition to above stated, TMA periodically hosts student scientific debates, in frames of which, students from TMA, as well as other medical HEIs are invited to state and protect their position, regarding preliminarily determined scientific subject, using factual knowledge and ethical considerations.
- **Case Study** – considers Situational Judgement Scenarios: is implemented on basic stage of education and considers discussion of clinical cases, correlations and situational scenarios in rather simple way, under guidance and supervision of teaching staff. On clinical stage of education, case studies consider demonstration of application of biomedical, social and clinical sciences' theoretical knowledge, clinical reasoning and practical skills, while assessing, analyzing and making diagnosis, elaborating management plan for given case.
- **Laboratory Teaching** – this method is applied in teaching of basic biomedical disciplines as a mandatory activity to teach basic scientific practical skills. Additionally, students have opportunities to engage in scientific-research projects and develop further relevant laboratory skills, while carrying out necessary tasks.

- **VR method** – teaching by applying modern technologies – computer programs and technologies for teaching in virtual 3D environment; anatomy visualization system - Anatomage table – for integrated teaching of biomedical disciplines.
- **CBCR sessions**– this format is implemented in the third year of the study in integrated Modules – Diagnostics of Internal Diseases I and II. It is undertaken in format of sessions and the topic of the CBCR is integrated with the body system studied in Diagnostics of Internal Diseases.

Flipped Classroom – active learning method, enhances student’s independent learning, group working and critical thinking skill. method implemented in subject

- **TBL sessions**– this problem oriented method is adopted in TMA as alternative method to PBL. TBL sessions are integral part of ICM(Introduction to clinical medicine) modules in I-V semesters as well as during teaching clinical disciplines.
- **CBL - Case Based Learning** is implemented in teaching of clinical disciplines and implies detailed consideration of real patient case, as well as use of evidence based principles – searching for new knowledge by using e-resources and its practical application by student.
- **Participation in Scientific Research** – as mentioned above, TMA students are actively involved in the scientific-research processes. On basic stage of education students are taught foundations of scientific research, which helps students to acquire valuable skills for further scientific development. Students learn how to obtain and assess evidence-based information critically, elaborate research design, plan and organize entire process, as well as analyze and present findings in essay format both verbally and in written form.
- **Explanatory method** – is based on providing considerations around given subjects. In practice, students are given by teaching staff a concrete example, followed by detailed explanation of various topic related aspects.
- **Audio-Visual method** – is practiced during both stages (basic and clinical) of study by vast majority of disciplines, in terms of using posters, atlases, computer programs, animations, video clips. Audio-visual method also includes use of various slides, Power Point presentations and a white(black) board.
- **Assisting a Doctor** – considers student’s participation during process of patient examination or while performing manipulations.

Educational plan

First year

I semester		
N	Learning Course	Credit
1	Human Anatomy I	6
2	General Histology, Cytology, Embryology	6
3	Genetics	4
4	Biochemistry I	6
5	Academic Writing	2

6	Integrated Module - Introduction to Clinical Medicine I (ICM I)	2
7	Georgian Language, Medical English	4
		30
II semester		
N	Learning Course	Credit
1	Integrated Module- Normal Structure and Function (NSF I)-spinal cord and sensory organs	7
2	Integrated Module- Normal Structure and Function (NSF II) - Brain	7
3	Biochemistry II	6
4	Molecular biology	3
5	Bioethics	3
6	Introduction to Medical Research	2.5
7	Introduction to Clinical Medicine II (ICM II)	1.5
		30

Second Year

III Semester		
N	Learning Course	Credit
1	Integrated Module- Normal Structure and Function (NSF III) - Cardio vascular system	7.5
2	Integrated Module- Normal structure and function IV (NSF IV) – Respiratory system	4
3	Immunology	4
4	Microbiology 1	6.5
5	Communication Skills	2.5
6	Social and Environmental Health	3.5
7	Introduction to Clinical Medicine III(ICM III) with TBL	2
		30
IV semester		
N	learning course	credit

1	Integrated Module- Normal structure and function V - Endocryn and reproductive system	4
2	Integrated Module- Normal structure and function VI – CI system	4.5
3	Integrated Module- Normal structure and function VII – Urinary system	2.5
4	Microbioly II	5.5
5	Integrated Module – General Basis of Disease and Treatment II (GBDTII) - Genetic and Pediatric Disorders, Infectious Diseases, Cancer and	6
6	Integrated Module – General Basis of Disease and Treatment II(GBDTII) - Genetic disorder, cancer, infection and toxicology	6.5
7	Introduction to Clinical Medicine IV(CM IV) with TBL	1
		30

Third Year

V semester		
N	Learning Course	Credit
1	Integrated Module – Basics of Disease and Treatment I (BDT I) - Cardiovascular & Respiratory Systems	7
2	Integrated Module – Integrated Module - Basics of Disease and Treatment II (BDT II) – GI System	6
3	Physiology of Behavior	3.5
4	Critical thinking	2
5	Health Pshychology	2
6	Integrated module – Introduction to clinical Medicine (ICM V)	3.5
7	Diagnosis of Internal Diseases I with CBCR	6
		30
VI semester		
#	Learning course	Credit

1	Integrated Module - Basics of Disease and Treatment III (BDT III)– Genitourinary System	4.5
2	Integrated Module - Basics of Disease and Treatment IV (BDT IV)– Endocrine and Nervous Systems (9wks)	7.5
3	Diagnosis of Internal Diseases II with CBCR	6
4	Behavioral Sciences	3
5	General surgery	4.5
6	Radiology	3.5
7	Capstone Course I	1
		30

Fourth year

VII semester		
N	Learning Course	credit
1	Internal Disease I	8
2	Otorhinolaryngology	2
3	Traumatology	3
4	Nevrology	6.5
5	Basics of Nutrition ∩	2.5
6	Lab. Medicine	2
7	Biostatistics and Fundamentals of Research	4
8	Elective: 1. Conscious Psychology 2 clinical immunology 3. clinical microbiology	2
		30
VIII semester		
N	Learning Course	Credit
1	Surgery I	6
2	Infectious Diseases	6
3	Clinical Parasitology	2
4	Obstetrics	6
5	Ophthalmology	2
6	Internal Disease II	4
7	Basics of Noninvasive Clinical Diagnostics in Cardiology	2

8	elective 1.Endocrinology 2. Allegology	2
		30

Fifth year

IX semester		
N	Learning Course	Credit
1	Internal Diseases III	7
2	Gynecology	6
3	Dematovenerology	3
4	Epidemiology	2
5	Pediatrics I	4
6	Clinical Toxicology and Emergency Medicine	3
7	Clinical Ethics and Legal Basis of Medical Practice	3
8	Elective 1. Tuberculosis 2.Neuroradiology	2
		30
X semester		
N	Learning Course	credit
1	Surgery II	6
2	Psychiatry	5
3	Family Medicine I	3
4	Pediatrics II	5
5	Critical Care and Anesthesiology	4
6	Health promotion and disease prevention	2
7	Urology	2
8	Capstone Course II	1
9	Elective: 1. Reproductology 2. Pediatric surgery 3. Neurosurgery	2
		30

Sixth year

XI semester		
#	Learning Course	credit
1	Family medicine II	3
2	Oncology and palliative care	3
3	Differential Diagnosis of Internal Diseases I I	6
4	Public Health	2
5	PediatricsIII	3
6	Forensic Medicine	3
7	Scientific Research Project I I	3
8	Gerontology and Geriatrics	2
9	Patient safety	2
10	Portfolio	1
	Elective : plastic surgery clinical nutritiology pediatric neurology	2
		30
XII semester		
#	Learning Course	Credit
1	Differential Diagnosis of Internal Diseases I II	7
2	Surgery III	5
3	Obstetric and gynecology	4
4	Clinical pharmacology and pharmacotherapy	4
5	Medical Rehabilitation	2
6	Good Clinical Practice	2
7	Scientific research project II	3
8	Portfolio	1
	Elective: 1. Paediatric Orthopedic Surgery 2. Vascular surgery	2
		30

To get acquainted with the syllabuses of educational courses provided by the Educational program is available at the

The syllabuses are protected by a code which may be received at the library or the Dean's office after the registration of the student.

Assessment System

Study course relevant ECTS credits are awarded to the student, in case of positive assessment after completion of the course. Students' knowledge is assessed through 100-point system, 60 points of which are accumulated during semester, through intermediate assessment, whereas 40 points are allocated for final examination. Intermediate assessment consists of following components:

- **Midterm Examination**, conducted on 8th week of semester for basic subjects and in the middle of rotation – for clinical disciplines. Duration of midterm examination is 1 hour.
- **Attendance**
- **Class Activity**, which may involve verbal or written assessment, presentation, essay, laboratory assignment, performance of clinical manipulations, practical procedures, assessment of clinical reasoning, assessment of activities in TBL and CBL, etc.
- **Free component** – in clinical disciplines
- **Portfolio assignments** – self-reflections, personal development plans, etc.

Number and nature of **class activity** subcomponents, as well as their assessment criteria are determined by the course leader and described in course syllabus respectively.

As mentioned above, 40 points are allocated for **final examination**. In order to get admitted to final examination, student must accumulate at least **37** points through intermediate assessments. Final examination may be written, oral or combined, consisting of written, (MCQ test or open text questions) oral and/or practical (OSPE/OSCE) components. Final examination is considered to be passed, in case if student gets at least 24 points(60%) from 40 points. It is noteworthy, that in order to pass combined examination, student must obtain at least 60% of indicated mark in each component.

The student is awarded ECTS credit in case of gathering minimum 61 points in final examination.

If student has 41-60 points in the final assessment, he/she is allowed to retake a final exam, without repeating study course. The interval between final and retake exams should be minimum 5 days. In case, if student accumulates less than 41 points in the final assessment, he/she has to repeat the study course.

In integrated modules all module subjects contribute to 37 points for getting allowed to final exam of the module; final examination may include both theoretical and practical components including all the subjects involved in the module.

OSPE (Objective Structured Practical Exam) exams are carried out in basic integrated modules and disciplines: microbiology, organ system integrated modules involving histology, anatomy, pathology.

At the end of 5th, 6th and 10th semesters **OSCE (Objective Structure Clinical Exam) exams** are carried out to assess clinical competencies. During the first OSCE exam at the end of 5th semester practical procedures are passed, at the end of 6th semester before OSCE integrated capstone course is carried out; communication skills, history taking and recording, patient consultation and patient physical examination are the main topics for OSCE. At the end of 10th semester after integrated capstone course students pass OSCE that incorporates clinical competencies taught in core disciplines: Internal Diseases, Surgery, O&G, Pediatrics, Family Medicine

and Psychiatry.

Portfolio Assignments – portfolio provides excellent opportunities for promotion of directed self-learning; elaboration and assessment of skills for life-long learning using reflection and personal-development plan(PDP) as well as for assessment of other competences related to professionalism.

In the 6th year of the study students' clinical competencies are assessed by **WPBA** (work-place based assessment) formative methods: **MiniCEX (Mini Clinical Evaluation Exercise)**, **CbD (Case-based Discussion)**, **MSF (Multi Source Feedback -- 360°feedback)**, **DOPS (Direct Observation of Procedural Skills)**. Assessment accumulates in portfolio with other content including self-reflections and personal development plans, and at the end of 6th year of the study portfolio exam is carried out: portfolio committee overviews portfolio and identifies if the student has reached competencies assessed by WPBA and elaborated by portfolio assignments. If student has not reached satisfactory level of a single competence, he is allowed to retake portfolio exam after 1 month. If the student has unsatisfactory levels in two and more competences he/she has to retake the semester. Pass in Portfolio exam is prerequisite for Final Examination.

At the end of the 6th year Final Examination has two components – MCQs and Oral – discussion of clinical cases in core subjects, the student is asked by commission.

Feedback: as a means of assessment and teaching is essential part of assessment system(formative assessment) in the educational program and is performed on regular basis; it can be conducted by oral and written form by teachers, supervisors and assessors in the course of theoretical teaching and practical skills training. Feedback is essential part of portfolio, it includes narrative feedback in relation of professional behavior, academic achievements, PDP and reflections and is conducted by the mentor. In terms of didactic teaching oral feedback is given during oral questioning, interactive seminars and discussions; after each written quiz students are given written as well as oral feedback-during classes teacher discusses all general and individual mistakes with them. During performing research projects students are given several written and oral feedbacks by supervisor when checking preliminary work(presentations, essays and proposals). Observation and feedback are performed on regular basis during clinical skills teaching at basic level of study and clinical clerkships at Clinical Skills Center and TMA affiliated clinics. During clinical skills teaching at Clinical Skills Center the teacher gives immediate oral feedback and coaching. The practice to make video recordings of communication with patient by students is used to make feedback by debriefing. During clerkships at affiliated clinics in format of bedside teaching, MiniCEX, student gets immediate feedback after observation by teacher(supervisor) in oral and written form. After midterm examination in any discipline students have opportunity to take 2 additional extracurricular hours for oral feedback by the teacher in a group, besides that, ¶ need students can have individual hours of feedback and consultation with course teachers or mentors during the semester. After final examinations individual feedback is given only to those students that apply for appeal.

Remediation: students have opportunity to work independently and improve their clinical skills and knowledge using TMA facilities: after getting feedback during formative assessment (observation) of clinical skill(communication skills, examination of patient, practical procedures)or in the case of failure in clinical skills summative assessment they have opportunity to practice at Clinical Skills Center; students can improve their knowledge of anatomy and other basic biomedical subjects through working extra hours at VR room and Anatomage table; they have opportunity to improve their lab. skills at TMA laboratory .

The scheme of point distribution in the evaluation system

Points	Evaluation
91-100 (A)	excellent
81-90 (B)	very good
71-80 (C)	good
61-70 (D)	satisfactory
51-60 (E)	Sufficient- hasn't passed; student is permitted to retake examination
41-50 (FX)	hasn't passed; student is permitted to retake examination
0-40 (F)	failed; credit is not granted, student should repeat study course

Programme Learning Outcomes/Competences are based on National Qualification Framework and Field Specifications of Medical Education Programme (which itself combines standards of WFME and Tuning Project) and The CanMEDs Roles Framework; the level of each competency is determined according to Miller's Pyramid.

Program Outcomes / Competencies

The level of Competency is determined according to Miller's pyramid

I Medical Expert

- 1. As a medical expert the graduate integrates 6 roles of physician:** communicator, collaborator, manager, health advocate, scholar and professional IV
- 2. The graduate applies the knowledge of Biomedical, Social and Clinical sciences in clinical problem solving and decision making:** -analyses pathogenesis of disease and links it with clinical manifestations, diagnosis, differential diagnosis, treatment, monitoring and prevention in the process of clinical reasoning and decision-making IV
- 3. The graduate performs consultation of patient and assesses clinical case:**
 - a. He/she takes relevant and accurate anamnesis IV
 - b. Carries out physical examination IV
 - c. recognize and assess severity of patient's condition and clinical presentation IV
 - d. draws up differential diagnosis IV
 - e. collects, analysis and interprets data (anamnesis, physical findings, different lab tests and etc.) IV
 - f. makes correct diagnosis IV
 - g. prescribes cost-effective and rational evidence-based treatment IV
 - h. provides patient-centered plan for self-care and ongoing care including prevention, management of patient with chronic disease, palliative and terminal care IV
- 4. The graduate provides first aid in emergency medical situations: IV**
 - a. Recognizes and assesses severity of medical emergencies: symptoms and signs
 - b. Provides basic first aid in patients of all age groups, carries out measures for basic life support and cardiopulmonary resuscitation, advanced life support, emergency trauma care
- 5. The graduate plans and performs practical procedures skilfully and safely III/IV:**
 1. Measurement of blood pressure (non-invasive) (IV- independently, on SP or real patient)

2. Measurement of peripheral and central pulse (IV - independently, on SP or real patient)
3. Measurement of respiration rate (IV - independently, on SP or real patient)
4. Measurement of temperature (IV independently, on SP or real patient)
5. Assessment pain using relevant scale system (IV - independently, on SP or real patient)
6. Measurement of oxygen saturation (IV - independently, on SP or real patient)
7. Oxygen administration (IV – Independently, on SP or real patient)
8. Transportation of the patient (IV – independently, on SP or real patient)
9. Measurement of blood glucose concentration (IV - independently, on SP or real patient)
10. Performing pulmonary functional tests (IV - independently, on SP or real patient)
11. Administration of inhaled medications (IV - independently, on SP or real patient)
12. Performing basic life support algorithm (IV - on Manikin) including following:
 - CPR – cardiopulmonary resuscitation
 - AED – Automatic External Defibrillation, in accordance to American Health Association (AHA)
 - BLS – DRCABD protocol
13. Sterile gowning, hand wash/ gloving technique (IV on him/herself)
14. Intradermal injection (III - on Manikin)
15. Subcutaneous injection (III - on Manikin)
16. Intramuscular injection (III - on Manikin)
17. Venepuncture (phlebotomy) and open blood-sampling (III - on Manikin)

18. Intravenous injection-IV push (III - on Manikin)
19. Intravenous cannulation (insertion/removal of catheter in peripheral vein) transfusion of crystalloids and drug administration, peripheral vein Intravenous bolus administration, Hepa-lock injection (III - on Manikin)
20. Nasogastric and orogastric intubation (III - on Manikin)
21. Urinary bladder catheterization (III - on Manikin)
22. Urinalysis (dip stick method) (III - independently)
23. Wound management- cleaning, bandaging and suturing (III - on Manikin)
24. Management of trauma, immobilization types and techniques (III - on Manikin).
25. Pre-hospital management of external and internal bleeding (III - on Manikin).
26. Endotracheal intubation and oxygen administration (III - on Manikin)
27. Central venous catheterization (internal jugular vein, subclavian vein) (III - on Manikin)
28. Drug administration routes and techniques, calculation of dose, dilution (III - on Manikin)
29. ECG taking techniques and procedure, interpretation of results (III - independently, on SP or real patient)

II Communicator

6. **The graduate effectively communicates with patient and patient’s family** in emphatic manner in accordance to ethical principles in terms of obtaining anamnesis, informed consent, explains diagnostic procedures and tests, treatment plan and methods to the patient; delivers bad news, deals with aggressive patient, communicates with disabled patient, can communicate with help of interpreter. **IV**

7. **The graduate documents medical records** – clearly, completely and orderly and communicates them to every other healthcare provider **IV**

8. **The graduate reports patient case /scientific research results in written /oral form** to colleagues and other healthcare providers **IV**

9. **The graduate demonstrates interpersonal communication skills:** performs effective communication with colleges and other healthcare providers as well as with any person with diverse ethnic, social, cultural and religious representation IV
10. **The graduate uses information technologies for effective communication:** to optimise patient care (manage patient data in confidential way, perform electronic and telephone communication with patient and colleagues) / performs research activities and shares research results with peers and scientific community IV
11. **The graduate communicates effectively with media and legal authorities:** demonstrates knowledge and application of key legal and ethical principles when communicating with media and authorities; takes part in ethical decision-making, certifies death, requests autopsy, uses international and Georgian active legislative and professional regulations within clinical practice. IV

III Collaborator

12. **The graduate effectively engages in team work and collaborates with colleagues /other healthcare providers:** gives and gets colleague's feedback, respects other's opinion, organizes sharing of workload and responsibilities among team members IV

IV Manager

13. **The graduate manages patient case and demonstrates leadership skills:** fairly allocates healthcare resources, sets priorities, provides safe, high quality and cost-effective care IV
14. **The graduate manages personal issues-** career, time, health; integrates personal life with occupational responsibilities IV

V Health Advocate

15. **The graduate applies knowledge of Behavioural and Social Sciences addressing the health needs of patient:**
The graduate evaluates psychological and social aspects regarding patients' disease, manages patient in healthcare system with preferred attention to patient's interests/rights IV
16. **The graduate applies knowledge of healthcare systems and is engaged in health promotion and disease prevention with individual patients and population:** obtains, assesses and uses epidemiological data; evaluates environmental, social, economical, occupational, cultural and nutritional factors and sets and carries out measures for primary, secondary and tertiary prevention for communicable and non-communicable diseases as well as for promotion of healthy lifestyle. IV

VI Scholar

17. **The graduate is engaged in directed self-learning:** IV
 - a. evaluates and describes own learning needs
 - b. develops personal learning plan
 - c. performs independent learning activities (active learning)
 - d. evaluates his/her learning results
 - e. he/she is motivated to do lifelong learning- self-reflection, personal development plan (PDP), feedback

18. **The graduate applies knowledge of scientific research methodology:** elaborates clear and relevant research questions, related to biomedical, psychological or social disciplines, plans and implements relevant research design, analyses research findings and formulates conclusions as well as presents it to colleagues and interested parties IV
19. **The graduate applies evidence-based medicine principles** - demonstrates critical thinking abilities: formulates relevant clinical or scientific question, searches for relevant medical information sources and applies new knowledge in clinical practice IV
20. **The graduate is engaged in teaching of patients, families, peers:** plans and delivers learning activities, provides feedback to enhance learning and performance IV

VII Professional

21. **The graduate applies the knowledge of Biomedical Ethics/Medical Law in medical practice:** demonstrates commitment to principles of equity regarding race, ethnicity, religion, gender, cultural differences; conducts in accordance to International and Georgian Medical Law and ethical principles when communicating with patient and colleagues, participates in ethical decision-making, respects patient rights, keeps principles of confidentiality and privacy IV(21)
22. **The graduate demonstrates professional attitude and general moral values of physician:** Integrity, honesty, empathy, altruism, commitment, respect, accountability, corrects himself IV (22)
23. **The graduate critically evaluates own and colleagues' practice:** identifies own autonomy limits & calls for help, knows competency limits of different healthcare providers and makes correct referral, performs peer review and provides continuous safe and high-quality care. IV (23)
24. **The graduate demonstrates critical thinking-** adapts to new and uncertain environment, analysis complex situation, makes appropriate decision and solves the problem –demonstrates creativity and leadership skills IV (24)
25. **The graduate demonstrates ability to act within international context:** knows foreign language (English), is up-to-date with modern international demands and standards of medical education, treatment and principles of health organization. IV (25)

Necessary infrastructure and human resources for programme implementation:

Study process is conducted at the building of TMA and affiliated clinics.

Study rooms at TMA are equipped with following inventory: desks, chairs, black and white boards, projectors and computers, posters and in some rooms, lockers. TMA has modern **library**, equipped with modern printed and electronic study and scientific resources, which can be accessed from reading space and learning zones for individual study. Other facilities, provided at TMA are Clinical Skills & (OSCE) Center, scientific-research laboratory, anatomical theatre, computerized examination center, (with CCTV surveillance) computer lab, staffrooms for academic personnel, conference halls and recreation spaces.

At the **Clinical Skills & OSCE Centre**, where **virtual clinic** is available, students have opportunities to acquire, enhance and master basic as well as advanced clinical skills using modern manikins, as well as exercise communication or physical examination skills using **SP(standardized and simulated patients)** or perform assessment on one another under supervision and guidance of trained staff members.

Scientific-research skills are elaborated and enhanced at the **scientific-research and teaching**

laboratories of TMA. Biochemistry, microbiology, pathology, immunology and physiology laboratory work is done by students in scope of basic disciplines as mandatory; as well as scientific activities performed by academic staff including guidance of extracurricular research done by students.

At the **Anatomical Theatre**, in the frames of anatomy study courses, students are able to attend dissection of animals' organs and participate within process.

VR -room, were students independently can work on different 3D models to study human Anatomy. Special spaces for teaching Anatomy, Histology and Pathology equipped with manikins, posters, microscopical slides and microscopes.

Study process is carried out by academic and invited teaching staff at TMA study building, as well as at affiliated clinical bases.

The opportunities for the continuation of study

After the completion of educational program the graduate has the right to continue the study in the doctorate or can take a course of residency in a concrete specialty in Georgia and abroad.

Future employment

After the completion of educational program, according to the Law of Georgia "On Physician's Work" the graduate is allowed: to work as a physician's assistant (under the supervision of certified doctor), to carry out scientific and pedagogical activities in the theoretical branches of medicine or other spheres of health care which does not mean independent work of a doctor.

