

Educational program for training primary school (grades I-VI) mathematics teachers

School name	School of Business Administration and Social Sciences
Title of the educational program (in Georgian and English)	დაწვებითი საფეხურის (I-VI კლასის) მათემატიკის მასწავლებლის მომზადების საგანმანათლებლო პროგრამა Primery Education (I-VI grade) mathematics teacher training educational program
Type of educational program	Independent teacher training educational program
Certificate of completion of the program	Teacher Training Certificate Primery Education (I-VI grade) mathematics teacher training educational program
Language of instruction	Georgian
Head of the program	Anzhela Abuladze, Affiliated Assistant Professor; Ia Robakidze - Affiliated Assistant Professor.
Prerequisite for admission to the program	
<p>A person with at least a bachelor's degree or an equivalent academic degree is eligible to enroll in a teacher training program.</p> <p>The basis for enrollment in a teacher training program is:</p> <ol style="list-style-type: none"> a) Successfully passing the relevant subject exam organized by the National Center for Assessment and Examinations; b) Passing the exam determined by the higher educational institution. <p>The form of the exam and the evaluation criteria determined by the higher educational institution are known to applicants in advance and are posted on the official website of the higher educational institution.</p>	
Duration of the program	
<p>The duration of the program is calculated for 2 semesters (one academic year), each semester lasts 19 weeks. The program includes 60 (ECTS) credits. One credit (ECTS) is equal to 25 hours of student work (student workload) and includes both contact and independent hours.</p> <p>The distribution of credits between different study components is based on a realistic assessment of the workload of a student with average academic achievement, which is required to achieve the learning outcomes established for each component.</p>	

The credit calculation does not take into account the time allocated for additional exams (preparation, passing, assessment), as well as the time for consultation with the person implementing the educational program component.

In case a student is unable to complete the mandatory components of the program and obtain at least 60 credits within one academic year, i.e. 2 semesters, he/she is given the opportunity to complete the program during an additional semester/semesters and obtain a Certificate of Elementary School (Grades I-VI) Mathematics Teacher.

The final results of the Elementary School (Grades I-VI) Mathematics Teacher Training Educational Program are achieved as a result of studying the educational components specified in the program.

Program structure

The program has been developed in accordance with the requirements of the ongoing reform in the education system. The program is based on the 2018 Higher Education Sectoral Characteristics of the National Center for Education Quality Development's Teacher Training Educational Program. The program is focused on the requirements declared by the Bologna Process and is based on the priority of competitiveness in assessing the quality of teaching.

In accordance with the requirements of the national qualifications framework, the training of a primary school (grades I-VI) mathematics teacher is carried out with the help of components of general pedagogy and psychology, subject methodology and school practice. The logical sequence of formation of the necessary competencies determines the content of the educational program for the preparation of a primary school teacher, its structure and is reflected in the curriculum.

The educational program for the preparation of a primary school teacher (grades I-VI) in mathematics includes 60 credits. One academic year consists of 38 weeks, one semester consists of 19 weeks.

To successfully complete the educational program for the preparation of a primary school teacher (grades I-VI), a student needs to complete the following courses of the program:

General Pedagogy and Psychology courses - 25 credits;

Teaching methodology courses in the relevant subject area (with embedded practice) - 24 credits (including all mandatory courses);

From the School Practice module - 11 credits (independent school practice course).

Program relevance to the mission

In accordance with the mission, the educational program for training primary school (grades I-VI) mathematics teachers is focused on training systematically and strategically thinking specialists for higher and secondary education, who will have the ability to effectively manage and develop in a constantly changing environment.

The mission of the Tbilisi Free Academy is to integrate into the international educational space, promote learning and teaching, lifelong learning, and the personal, professional and harmonious development of the individual. The Academy is focused on preparing highly qualified, competitive personnel for the labor market in accordance with fundamental values and modern requirements. The Tbilisi Free Academy creates the primacy of academic freedom, which ensures educational progress. It promotes the process of attracting highly qualified personnel and engaging in an innovative environment. The Academy, adhering to the principles of equal access and impartiality, is focused on one of the main functions of education, the process of socialization. The main vision of the Academy is to develop a policy of continuous improvement of the quality of education and the widespread use of modern management methods.

The educational program for the training of elementary school (grades I-VI) mathematics teachers provides a thorough education that meets the requirements of employers for specific field competencies.

Relevance of the program

The relevance of the educational program for training primary school (grades I-VI) mathematics teachers is determined by the implementation of support for the country's priority direction - school reform. It is valid that the professional development of teachers in order to develop modern standards and relevant competencies is highly relevant in modern reality and, accordingly, in the educational space, which is the basis for ensuring that it will contribute to the implementation of the tasks set in the direction of improving both pedagogical skills and professional subject competencies.

Program Objective

The program aims to prepare primary school (grades I-VI) mathematics teachers who will have the theoretical knowledge, practical skills and values appropriate for their professional activities and will be able to respond to modern challenges posed to teachers.

The goals and learning outcomes of the program are consistent with the field characteristics of the teacher's higher education, the subject part of the corresponding level of the teacher's professional standard, and the

requirements for a senior teacher.

Program objectives:

- To prepare highly qualified and competitive primary school (grades I-VI) mathematics teachers with general and sectoral competencies in accordance with the current legislation of Georgia and modern requirements;
- To develop in the teacher the ability to think critically, innovative and academic skills, civic awareness and democratic values;
- To provide the teacher with the knowledge and skills necessary for teaching the subject, which will be oriented towards continuous professional development
- To help the teacher become competitive and receptive to innovations in order to be able to respond to the modern demands placed on the teacher.

Program learning outcomes

The program outcomes and goals are fully consistent with each other, are measurable and realistic. The learning outcomes are adequate and take into account the requirements of the sectoral manual developed for the educational program for the training of mathematics teachers at the primary level (grades I-VI).

Graduate:

- Understands the planning, management and evaluation of the learning process focused on the student and the results, taking into account the national goals of general education, the national curriculum and the needs of the student;
- Has a deep knowledge of personality, development and educational theories and effectively uses them to create a safe, free and motivating learning environment, taking into account the individual, special needs of each student, their cultural diversity, differentiated approaches;
- Knows classroom management strategies, analyzes the causes of conflicts and responds adequately;
- Can use student assessment methods purposefully to assess the achievement and progress of each of them;
- Plans and manages extracurricular activities taking into account the interests and abilities of students;
- Identifies the importance of using supporting resources and ICT technologies in the learning-teaching process for student motivation, learning and all-round development;
- Understands the integration of democratic values and sustainable development goals into the educational process in the upbringing of a responsible citizen towards the social and natural environment;
- Understands the importance of establishing a collaborative culture at school and the rules of professional ethics. Communicates effectively with students, colleagues, and parents to improve student outcomes and create a positive environment.

Methods of achieving learning outcomes

In order to achieve the learning outcomes of the training courses, the following methodology is used: the lecture is fully devoted to the theoretical part of the training course to be studied, where the student is given the opportunity to obtain broad theoretical knowledge; literature and publications in the native and foreign languages are used. Theoretical classes are held in the lecture format in an interactive manner. Taking into account the specifics of the training course, technical means may be used. Practical classes involve the performance of a number of tasks, the most important of which are: preparation of a thematic presentation, performance of practical exercises, activity in practical classes (using the brainstorming method), case analysis, performance of quizzes, preparation of essays, etc. Preparation of individual and/or group presentations by students is an integral part of the learning process. Taking into account the characteristics of a specific training course, the lecturer implementing the training course may use the following teaching and learning methods:

- Discussion/debate – one of the most common methods of interactive teaching. The discussion process dramatically increases the level of student engagement and activity. Discussion can turn into a debate, and this process is not limited to questions asked by the teacher. It develops the student's ability to reason and justify their own opinion;
- Demonstration method – this method involves visual presentation of information. In terms of achieving results, it is quite effective. In many cases, it is better to provide students with the material simultaneously in audio and visual form. The material to be studied can be demonstrated by both the lecturer and the student. This method helps to make the different stages of perception of the learning material visible, to specify what students will have to do independently; at the same time, this strategy visually presents the essence of the issue/problem. Demonstration may take a simple form;
- Inductive method - defines a form of any knowledge transfer when the course of thought in the learning process is directed from facts to generalization, that is, when conveying the material, the process proceeds from the specific to the general;
- Deductive method - defines a form of any knowledge transfer that represents a logical process of discovering new knowledge based on general knowledge. That is, the process proceeds from the general to the specific;
- Analysis method - helps us break down the educational material as a whole into its constituent parts. This simplifies the detailed coverage of individual issues within complex problems;
- Synthesis method - involves grouping individual issues to form a single whole. This method contributes to the development of the ability to see the problem as a whole;
- Explanatory method - is based on reasoning around a given issue. When conveying the material, the professor cites a specific example, which is discussed in detail within the framework of a given topic. This method will promote maximum group involvement in the process of discussing issues, the student's ability to think logically, form an independent opinion, justify their own opinion and respect the

opinions of others;

- Presentation - involves the formation of students into appropriate groups. Students can select presentation topics on the instructions of the lecturer or independently and defend them publicly based on the processing of the found material;
- Verbal presentation - includes knowledge of theoretical issues, which is carried out in the form of a narrative or in the format of answering questions and involves participation in a survey, discussion. Verbal presentation involves demonstrating knowledge of theoretical issues and reasoning on specific issues;
- Problem-based learning (PBL) - is a method that involves students acquiring both practical skills and theoretical knowledge in the context of solving a specific problem;
- Case study - a situational analysis method, the basis of which is teaching by solving specific tasks/situations, the so-called "cases". The teaching method is based on the discussion of specific practical examples (cases). "Case" is a kind of tool that allows the use of theoretical knowledge to solve practical tasks. By combining theory and practice, the method effectively develops the ability to make reasoned decisions in a limited time;
- Heuristic method - is based on a step-by-step solution to the problem and independent recording of facts during teaching. The method involves the student's calculation of generalizing indicators reflecting the development of a particular direction, determining the regularity of the development of events and drawing conclusions. The student must present the results at a practical lesson and be able to conduct a discussion with the audience;
- Brainstorming - the method involves the formation and expression of as many, preferably radically different, opinions and ideas about a specific issue/problem within the framework of the topic;
- Quiz - is a written work (testing theoretical material within the framework of the topic studied); this method measures the student's knowledge, abilities, and skills. The quiz consists of theoretical questions;
- Role-playing games - are an active teaching method aimed at developing dialogical and monologue speech, listening skills. During role-playing games, sectoral vocabulary, language constructions, and clichés appropriate to the communication situation are used and memorized. The goal of this activity is for participants to gain more knowledge based on sharing each other's experiences. Games carried out according to a pre-developed scenario allow students to look at the issue from different positions. It helps them form an alternative point of view. Like discussions, these games also develop the student's ability to independently express his or her position and defend it in an argument;
- Role-playing games – are an active teaching method aimed at developing dialogical and monologue speech, listening skills. During role-playing games, the relevant field vocabulary, language constructions, clichés of the communication situation are used and memorized. The goal of this activity is for participants to gain more knowledge based on sharing each other's experiences. Games carried out according to a pre-developed scenario allow students to look at the issue from different positions. It

helps them form an alternative point of view. Like discussions, these games also develop the student's ability to independently express their position and defend it in an argument;

- Essay – independent work on a topic predetermined by the lecturer – is an effective method of assessing students' learning outcomes. Its use in teaching contributes to the development of students' habits of clearly and correctly expressing their opinion, in a logical sequence, and speaking using field terminology. The essay also accustoms students to use examples, quotes, and express their own opinion on the topic under discussion. The purpose of the essay is to diagnose the productive and creative part of students' cognitive activity, which involves assessing the skills of analyzing information, interpreting it, constructing arguments, and formulating conclusions;
- Seminar report - is a method that develops the student's skills in independently finding relevant, reliable, and high-quality sources of information, collecting and explaining data, identifying problems, presenting ways to solve them, developing theses, and presenting conclusions. The seminar report reveals the level of knowledge of the issue and the depth of material processing;
- Complex task/presentation - development of creative and critical thinking; formation of a positive attitude towards discoveries and the search for novelty; Development of specific skills necessary for orientation in time and space, interpretation of facts and events, and determination of regularities;
- Group project - an original work performed by a group of students, which presents a methodical treatment of a topic. The work should demonstrate the competence of the authors on the issues discussed;
- Embedded practice - allows the program participant to transfer theoretical knowledge to a real school environment. It involves the involvement of the program participant in both passive and active school practical activities;
- Creation of an electronic learning resource - the purpose of which is to promote the recall and repetition of the material studied by students, the consolidation of the explained material, the understanding of texts, the development of dynamic and transferable knowledge.
- Test - a written work during the midterm assessment and final exam, etc.

Note:

Lecturers implementing training courses, taking into account the specifics of the training course, determine the various methods to be used in the training process, which are reflected in the syllabi of the relevant training course.

Student knowledge assessment system

It is not permissible to evaluate the learning outcomes achieved by a student only once - based on the final exam. The assessment of a student's work takes into account, in a certain ratio:

- Intermediate assessments (midterm exam and current semester assessment);

- Final exam;
- The maximum grade for a course is 100 points;
- The final exam should not be graded more than 40 points.

The evaluation system allows:

a) Five types of positive evaluation:

- a.a) (A) Excellent – 91-100 points of evaluation;
- a.b) (B) Very good – 81-90 points of maximum evaluation;
- a.c) (C) Good – 71-80 points of maximum evaluation;
- a.d) (D) Satisfactory – 61-70 points of maximum evaluation;
- a.e) (E) Sufficient – 51-60 points of maximum evaluation.

b) Two types of negative evaluation:

- b.a) (FX) Failed – 41-50 points of maximum evaluation, which means that the student needs more work to pass and is given the right to take the exam once with independent work;
- B.B.) (F) Failed – 40 points or less of the maximum grade, which means that the work done by the student is not sufficient and he/she has to study the subject again.

The midterm assessment is divided into components: practical activity and midterm exam, each of which has a percentage share in the assessment system. From the 100-point system, 60 points are allocated to the midterm components, and 40 points are allocated to the final exam. The 60 points allocated to the midterm components are distributed according to the midterm assessments.

Based on the specifics of a particular course of study, the course provider determines the content, weighting, and assessment criteria of the components included in the midterm assessment element in the course syllabus. The course provider is not limited to having different assessment components in the syllabus and their weighting based on the specifics of the course.

Academic requirements for student assessment:

In order to be awarded a credit, a student is obliged to exceed the minimum competency threshold established in each form/component of assessment of the course syllabus.

The minimum competency threshold established in each form of assessment of the course in the educational component envisaged by the educational program shall not exceed the following amounts established by this rule, respectively:

Mid-term semester grade - 31 points;

Final exam - 20 points.

During the course, one midterm exam is held - maximum score 20 points (minimum competency threshold 11

points). A different score may be set for the assessment of school practice.

The midterm assessment (maximum 60 points) is divided into components:

Activity (maximum 40 points) - work in a working group, practical classes, preparation-presentation of projects and abstracts, quizzes, etc. (specified in the syllabi).

- **Midterm exam (maximum 20 points)** - (format specified in the syllabus)

Depending on the specifics of a particular course, it is possible to specify the components included in the midterm assessment element: the content and share of the components are determined by the lecturer implementing the course in the relevant syllabus.

If a student fails to pass the minimum competency threshold set in each form/component of assessment specified in the approved course of study at the Tbilisi Free Academy, he/she will be removed from the course and given an "F" grade, which requires re-study of the specified course.

The final exam is held at the end of the semester, within the deadlines specified in the academic calendar of the educational process; the right to take the final exam is granted to a student who has passed the minimum competency threshold set in each form/component of midterm assessment.

In case of receiving a final grade of "F" for a course, the student is obliged to re-study the course. Only if he/she receives a positive grade in the aforementioned courses, he/she may take the courses linked to it, taking into account the prerequisites.

In case of re-studying a course, the student's final result in the current course will be considered as his/her grade; In case of FX grade and/or failure to appear for the final exam, as well as in order to improve the grade received, the student is given the right to retake the exam once in an additional exam in the same semester, no later than 5 days after the final exam; The grade received in the additional exam is the final grade and is reflected in the final grade of the educational program component; In case of receiving 0-50 points in the final grade of the educational component, taking into account the grade received in the additional exam, the student is given an F grade.

School practice: Educational school practice is one of the important aspects of student training within the educational program. The goal of practice is to prepare students in three directions - the educational/teaching process, the educational/educational process, and the teacher's professional development process. Accordingly, the goal of school practice is for the student to use the knowledge gained in the educational process in practice (in the lesson). In the framework of the educational program for teacher training at the primary level (Georgian language and literature, mathematics, natural sciences - grades I-IV), practice consists of two stages. In particular, this is built-in practice, which involves observing the process of applying theoretical knowledge gained within specific training courses in practice, and at the second stage, a school practice course in all directions, where

students will use and confirm the knowledge gained in methodological training courses in practice (plan and conduct lessons, create electronic portfolios, write a practice report, etc.).

Note:

The evaluation rules, electronic portfolio production, forms, components, criteria, and acceptable scores are specified in the relevant course syllabi.

Employment

- Primary school teachers (Georgian language and literature, mathematics, natural sciences - grades I-IV) in general education institutions;
- Student preparation centers;
- Teacher training centers;
- Educational resource centers;
- Governmental and non-governmental organizations working in the field of education, etc.

Opportunity to continue your studies

Graduates of the Primary School Mathematics Teacher Training Program (Grades I-VI) can continue their studies at a master's/doctoral degree level in a related or related specialty.

Human resources necessary for program implementation

The implementation of the educational program for the preparation of primary school (grades I-VI) mathematics teachers is ensured by appropriate human resources. The educational components envisaged by the educational program are led by the academic staff of the Tbilisi Free Academy, as well as invited specialists with prior experience and competencies.

Note: For additional information on human resources, see the appendix.

Material and technical resources necessary for the implementation of the program

For the organizational management and implementation of the educational process envisaged by the program, as well as for the achievement of learning outcomes, the Academy's existing classrooms, computer class, inventory necessary for conducting the educational process, a library equipped with modern technologies and relevant mandatory literature for the program's courses, information and communication technologies and relevant computer programs, an internal network and the Internet, an electronic library, a website and e-mail, which are freely available for communication with both students and academic/invited personnel, are used.

To implement the internship component, students will undergo internships at partner general education schools.

Structure of the Educational Program for Training Primary School (Grades I-VI) Mathematics Teachers

	Name of the training course	Course code	Credit	Hour	Lecture	Practical training embedded practice	Practice	Midterm exam	Final exam	Contact hours	Independent work	Distribution of credits by semester		Prerequisite	
												I	II		
General Pedagogy and Psychology Training Courses															
1.	Planning and management of the learning process	LPLM11	4	100	15	30			2	3	50	50	X		Without prerequisites
2.	Basic principles of inclusive education	INCE11	3	75	15	15			2	3	35	40	X		Without prerequisites
3.	Developmental psychology	PSTH11	4	100	15	15			2	3	35	65	X		Without prerequisites
4.	Legal foundations of the education system	EDUL11	3	75	15	15			2	3	35	40	X		Without prerequisites
5.	Classroom assessment	CLASSA11	5	125	15	30			2	3	50	75	X		Without prerequisites

6.	Pedagogical research	PEDR21	3	75	15	15			2	3	35	40		X	Basic principles of inclusive education; Developmental psychology
7.	Developing democratic culture competencies in students	DEMC21	3	75	15	15			2	3	35	40		X	Legal foundations of the education system
Subject Methodology Training Courses															
8.	Mathematics Teaching Methodology 1 (Mathematics 1-6)	1MATHL11	6 (5+1)	150	26	26	15		2	3	72	78	X		Without prerequisites
9.	Mathematics lesson planning and student assessment (Mathematics I-VI)	MATHP21	6	150	30	30			2	3	65	85		X	Mathematics Teaching Methodology 1 (Mathematics 1-6); Classroom Assessment; Planning and Management of the Learning Process
10.	Mathematics Teaching Methodology 2 (Mathematics 1-6)	2MATHL21	6	150	30	30			2	3	65	85		X	Mathematics Teaching Methodology 1 (Mathematics 1-6); Classroom Assessment; Planning and Management of the Learning Process.

11.	Creating resources using information technology in teaching mathematics	MATHIT11	6	150	30	30				2	3	65	85	X		Without prerequisites
School practice																
12	Independent course in pedagogical practice	PRAC21	11	275							6	150	119		X	All courses of the first semester