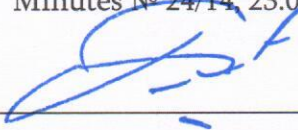
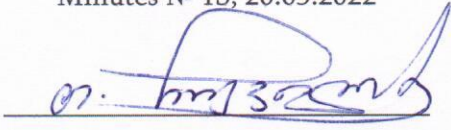


Approved
by Academic Council
Minutes № 24/14, 23.05.2022


Professor Zurab Vadachkoria
Chairman of Academic Council,
Rector



Seconded
by TSMU, Pharmacy Faculty Board
Minutes № 13, 20.05.2022


Associate Professor Tamar Chikviladze,
Chairman of Faculty Board,
Dean

Tbilisi State Medical University



Faculty of Pharmacy
Pharmacy Bachelor's Program
Language of the study - English

Tbilisi
2022

Name of the Educational Program -	Pharmacy Bachelor's Program
Qualification/ awarded academic degree -	Bachelor of Pharmacy
Language of study -	English
Length of program -	240 (1 ECTS Credit equals to 30 hours)
Study Duration -	4 years (8 semesters)
Head of Educational Program -	Associate Professor, Anna Bozhadze

Preamble

The Faculty of Pharmacy of Tbilisi State Medical University has an extensive experience, traditions, relevant human resources and material and technical base for the preparation of qualified pharmacy bachelors. Accreditation of the Bachelor's Program in Pharmacy of Tbilisi State Medical University was implemented on September 6, 2012 (Protocol of the Accreditation Council for Educational Programs № 11).

Pharmacy is a rapidly and dynamically developing field. Today, both the world and the Georgian pharmaceutical market is represented by numerous medicines. Qualified medical care is accompanied by appropriate pharmaceutical care and rational pharmacotherapy, which is impossible without qualified pharmaceutical staff.

Aims of the Educational Program

The Pharmacy Bachelor's Program, in line with TSMU's mission, vision, values and strategic development policy, provides training for Bachelor of Pharmacy competitors in line with competitive, modern field development requirements and values, with continuous professional development skills.

Objectives of the Program

➤ To give the student knowledge:

- On the biomedical and chemical basis of the pharmaceutical sciences;
- About basic principles of pharmaceutical activity.

➤ To make the student:

- Ability to engage in pharmaceutical care (within competence);
- Ability to perform pharmaceutical analysis and make conclusions;
- Ability to participate in the production of pharmaceutical products.

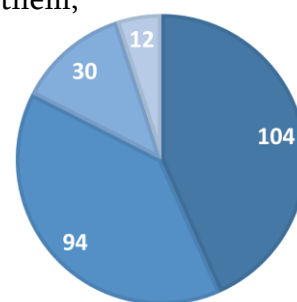
After completing the program student will be able to:

- Implementation of qualified pharmaceutical care;
- Providing the user with effective, safe, quality and affordable medicines;
- Production and serial production of medicinal raw materials, substances, medical-prophylactic means;
- Implementation of technological processes and safe operation of equipment;
- Analysis of raw materials, substance treatments, quality control and standardization.
- Management of structural units of pharmaceutical institutions and continuing education at the next level of higher education.

Structure of the Educational Program

Duration of the Bachelor's program is 4 years, i.e 8 semesters and includes 240 ECTS credits:

- **104 credits** – basic and general-transfer study courses, among them,
 - 48 credits – basic medical study courses,
 - 40 credits – general study courses,
 - 11 credits – Georgian Language,
 - 5 credits – scientific research oriented study courses;
- **94 credits** – professional study courses;
- **12 credits** - elective study courses;
- **30 credits** – Integrated module of Pharmacy.



Integrated Module of Pharmacy (30 credits) is implemented in the VIII semester, which includes thematic parts of the module with appropriate thematic parts:

- Pharmaceutical Analysis - 8 conditional unit (c/u),
- Pharmaceutical Technologies - 8 c/u,
- Pharmaceutical Care 2 – 8 c/u,
- Pharmacognostical Analysis - 4 c/u,
- Pharmacotherapeutic Choice - 2 c/u.

Module implementation and assessment rules are detailed in the relevant syllabus.

Prerequisite for admission to the program

Enrollment in the program is carried out by the Ministry of Education and Science of Georgia in accordance with the rules established by law on the basis of Order N244 of December 29, 2011.

The following are eligible for enrollment in the Pharmacy Bachelor's Program:

- Foreign nationals who have received full general or equivalent education in a foreign country;

- Foreign nationals who have studied / studied at a foreign higher education institution and have received ECTS credits in accordance with the legislation of that country.

Registration for the international students in the Pharmacy Bachelor's Program is free of charge and is carried out on the spot, upon submission of the relevant documentation and their notarized Georgian translation.

In order to determine the level of knowledge of the program language of instruction, the applicant is required to conduct an on-site interview at TSMU or via Skype (Skype ID: TSMU_IRD). The video recording of the interview is uploaded on the website of the University and is available to the Ministry of Education and Science of Georgia.

Learning Outcomes

1. Knowledge and understanding
<p>1.1 Knowledge of basic and biomedical study courses and critical understanding of knowledge in pharmaceutical study courses;</p> <p>1.2 Knowledge of profile study courses to work out the pharmaceutical activity;</p> <p>1.3 Knowledge of importance of pharmaceutical raw materials, production, analysis, standardization for effective, safe and high quality pharmacotherapy.</p>
2. Skills
<p>2.1. Manufacture and serial production of medical raw materials, substances, pharmaceuticals.</p> <p>2.2. Analysis of Medical Raw Materials, Substances, Analysis of pharmaceuticals, Quality Control, Standardization, Chemical-Toxicological Analysis;</p> <p>2.3. Data collection during the implementation of pharmaceutical activity, critical analysis, and drawing grounded conclusions. Preparing / presenting reports on ways to solve emerging problems using information and communication technologies;</p> <p>2.4. Implementation of a research or practical project based on predefined guidelines and analysis of information in the scientific literature.</p>
3. Responsibility and autonomy
<p>3.1 Understanding his / her place, role and responsibility in professional activities, participating in the establishment of new standards for the production, quality control, distribution, pharmaceutical care and rational pharmacotherapy of medicines;</p> <p>3.2 Based on objective assessment of his / her own knowledge and skills, independently identifies and plans the need for learning for continuous professional development.</p>

Methods for achieving learning outcomes

The following methods are used during the implementation of the program:

- **Verbal or oral method.** This method is mainly used in lectures - the transmission of new material orally with or without multimedia material with animated displays of equipment and technological processes.
- **Discussion / debate** - is one of the most common methods of interactive teaching. During the seminar, the discussion process enhances the quality and activity of student engagement. This process is not limited to questions asked by the professor. This method develops the student's ability to argue and reason.
- **Team working** - Teaching method includes dividing students into groups and assigning them different or identical tasks, which may be for example: Object of analysis: plant material, substance, or medicine. Group members work individually on the issue and share it with the rest of the group. Depending on the set task, team members will be assigned functions that ensure maximum involvement of all students in the learning process and develop teamwork skills.
- **Demonstration method** - This method means visualizing the information. It is necessary for the teacher to demonstrate the method of practical work at different stages of the study course. It is quite effective in achieving the result; both the teacher and the student can demonstrate the teaching material. This method helps us to identify different levels of perception of the learning material. Specify what students will have to do independently. The demonstration can be simple or take on a complex form such as conducting a multi-step experiment.
- **Explanation Method** - Based on a discussion of a given topic, the professor cites a specific example when delivering the material, which discussed in detail within a given topic.
- **Role-Playing and Situation Games** - Scenario-based role-playing games allow students to look at the issue from different perspectives and help them form an alternative perspective. Like discussion, role-plays develop the student's ability to express his or her position independently and to defend himself or herself in an argument.
- **Action-Oriented Learning** - This method also helps during the lab work, with practical interpretation of theoretical material being particularly relevant.
- **Written Method** - During the teaching process, especially in the laboratory, the students record the work done as well as the protocols for solving specific situational tasks.
- **Practical Methods** - During the teaching process, in particular laboratory classes, the student performs independent pharmacognostical, pharmaceutical and toxicological

analysis, as well as technological processes using appropriate machinery-machines, in compliance with safety rules.

Students' Assessment System

The European Credit Transfer and Accumulation System (ECTS) is implemented at Tbilisi State Medical University; ECTS is based on learning outcomes and student-oriented learning. Its purpose is to facilitate the planning, implementation, assessment / reference of learning units, as well as student mobility.

Academic credit is a standard used by the TSMU to measure and assess students' work and effort during the program (1 credit equals 30 hours). Through academic credits, students get a consistent and transparent way of valuing their learning achievements.

The components of assessment of student achievement are intermediate assessment and final assessment, the sum of which is the final assessment (0-100 points).

The evaluation of the student's work includes:

A) **Intermediate assessment**, which includes the sum of points obtained according to the methods/parts of knowledge assessment provided by the syllabus of the course (students' weekly / daily current academic, practical activities, presentation / s, colloquium / s, etc.) and is determined by 0-60 points.

B) **evaluation of the final exam**. Out of 100 points of maximum evaluation of the study course / module, 40 points are allocated to the maximum evaluation of the final exam.

The student is allowed to take the final exam if the sum of his / her mid-term assessments reaches a minimum of 31 points.

The final exam grade is positive if the student receives 20 or more points (ie 50% or more of the maximum grade of the test). A course is considered passed if the sum of positive points for the midterm and final exams is 51 points or more.

Out of 100 points of maximum evaluation of the training course / module, 40 points are allocated to the maximum evaluation of the final exam. The most commonly used assessment methods are: Test, Oral or Combined Summative Exam.

Student assessment is carried out in accordance with the Order # 3 of the Minister of Education and Science of Georgia of January 5, 2007. The evaluation system allows five types of positive and two types of negative evaluations.

➤ Positive evaluations are:

- A - Excellent – 91-100 points;
- B - Very good - 81-90 points ;
- C – Good - 71-80 points;
- D – Satisfactory - 61-70 points;
- E – Acceptable/Sufficient - 51-60 points.

➤ **Negative evaluation are:**

(Fx) – Don't pass – 41-50 points , which means that the student needs more work to pass and gives the right to take an additional exam after some independent work (not less than 5 days);

(F) - Failed – 40 points and less, which means that the work carried out by the student is not enough and he / she has to study the subject from the beginning.

Student has the right to take a secondary (additional) exam in the same semester; interval between the final and secondary exam should be not less than 5 days.

Peculiarities of organizing Educational process

The implementation of the educational program is provided by highly qualified pedagogical staff. The study courses are led by the academic staff, invited specialists and teachers selected through a competition of the relevant profile. Who have experience in professional activities and, in parallel with pedagogical activities, engage in intensive scientific research and methodological work.

One of the important criteria for the involvement of the academic staff and the invited teacher and / or researcher in the educational process is his / her research activity, confirmed by scientific publications. Priority is given to publications in Impact Factors. An important defining criterion for obtaining the status of an invited teacher is his / her practical and / or academic experience.

For the successful implementation of the program, the faculty actively cooperates with foreign universities:

- University of Liege (Belgium);
- Aix-Marseille University (France);
- George Emil Palade University of Medicine, Pharmacy, Science and Technology of Targu Mures (Romania);
- Medical University of Lublin (Poland);
- University of Quebec at Chicoutimi (Canada).

Dozens of faculty members, bachelor, master, PhD programs students underwent internships at these universities.

Methodological Support of the Educational Process

The teaching process of each course provided in the curriculum of the program is provided with relevant teaching-methodological documentation: syllabus of the study courses, lecture courses, basic textbooks and additional information sources, teaching-methodical recommendations, multimedia teaching technologies and audio / video materials.

The educational program, its training courses are based on modern scientific knowledge, which implies the full and adequate inclusion of medical-biological, accumulated and up-to-date, evidence-based knowledge and methodology in the learning process.

The foundation on the basis of the University Library and Study Departments, in printed and electronic form, contains the literature mentioned in the curriculum. A reflection of the current achievements of the field is provided by the learning outcomes of the program, as well as by involvement in the international electronic library network.

Material and technical support of the Educational process

Pharmacy Bachelor's Program will be implemented on the basis of TSMU Faculty of Pharmacy, Study building (Vazha-Pshavela N 33), where profile departments with specialized study literature, laboratories for practical and laboratory work, technical equipment and computer equipment are located as well as lecture auditoriums, Laboratory of Scientific Research and Practical Skills of the Faculty of Pharmacy. The students will pass basic study courses on the base of basic departments of Tbilisi State Medical University.

Organization of study practice

To achieve the results of the program, special attention paid to the professional practice carried out of Scientific-Research and Practical Skills Laboratory of the Faculty, TSMU Iovel Kutateladze Institute of Pharmacochimistry, Pharmaceutical companies: Aversi-Pharma, PSP Pharmacy, The pharmaceutical company "Neopharm", based on the memorandum and agreement signed with them.

Areas of Employment

Based on the acquired knowledge and skills, pharmacist can employ within the scope of competence:

- In the healthcare system;
- In pharmaceutical companies;
- In scientific research institutes;
- In pharmaceutical enterprises;
- In the laboratories of the Medicines Quality Assurance, Forensics Bureau;
- In pharmaceutical bases;
- In pharmacies;
- In chemical reagents and medical equipment facilities.

Opportunity to continue the study

Pharmacy Bachelor's Program can continue the studies on the Master Program.

The Study Plan of Pharmacy Bachelor's Program

N	Study Course/Module	ECTS credits	Amount of credits
I semester			
1.	Basics of High Mathematics	3	30
2.	General and Inorganic Chemistry	4	
3.	Basics of Histology	3	
4.	Medical Biophysics	3	
5.	Pharmaceutical Botany 1	5	
6.	Medical Biology	2	
7.	Pharmaceutical Ethics and Deontology	2	
8.	Information Technologies with Biostatistic Elements	2	
9.	Georgian Language 1	4	
10.	Elective study course: Professional Latin Language/Bioethics	2	
II semester			
1.	Basics of Human Anatomy	3	30
2.	Pharmaceutical Care 1	4	
3.	Communication skills	3	
4.	Basics of Parasitology	3	
5.	Pharmaceutical Botany 2	4	
6.	Analytical Chemistry	5	
7.	Georgian Language 2	4	
8.	Basics of Scientific Research	2	
9.	Elective study course	2	

III semester			
1.	Organic Chemistry 1	4	30
2.	Basics of Microbiology and Virology	4	
3.	Human Physiology 1	4	
4.	Physical and Colloid Chemistry	4	
5.	Basic Environmental Health	3	
6.	Clinical Skills	2	
7.	Georgian Language 3	3	
8.	Molecular Biology with Genetics	3	
9.	Basics of Research of Natural Products	3	
IV semester			
1.	Instrumental Methods of Analysis	4	30
2.	General Biochemistry	5	
3.	Human Physiology 2	4	
4.	Pathology 1	3	
5.	Pharmacognosy 1	5	
6.	Organic Chemistry 2	4	
7.	Basics of Immunology	3	
8.	Elective study course	2	
V semester			
1.	Pharmaceutical Chemistry 1	5	30
2.	Toxicological Chemistry 1	4	
3.	Pharmacognosy 2	5	
4.	Technology of Galenic Preparations	7	
5.	Pharmacology 1	4	
6.	Pathology 2	3	
7.	Elective study course	2	

VI semester			
1.	Pharmaceutical Chemistry 2	10	30
2.	Pharmacology 2	4	
3.	Toxicological Chemistry 2	4	
4.	Technology of Pharmaceutical Dosage Forms	10	
5.	Elective study course	2	
VII semester			
1.	Organization and Economics of Pharmaceutical Activity	4	30
2.	Clinical Pharmacy	7	
3.	Pharmacotherapy	8	
4.	Basics of Pharmacokinetics	4	
5.	Pharmacy Management and Marketing	3	
6.	Technology of Cosmetics and Perfumes	2	
7.	Elective study course	2	
VIII semester			
1.	Integrated Module of Pharmacy		30