

Tbilisi State Medical University

Educational PhD Program – Pharmacy

Program Name	PhD in Pharmacy
Program Leader	Professor David Jincharadze
Qualification to be awarded	Academic Doctor of Pharmacy
Program volume in credits	180 credits (1 ECTS credits = 30 hours)
Language of Instruction	Georgian
Aim of the program, which is focused on developing student competences and defining the sphere of employment	<p>The aim of the PhD program is to train independent, competitive academic personnel/researchers for scientific-research establishments, who will possess the knowledge based on most recent achievements in pharmacy and its sub-fields (pharmaceutical technologies, pharmaceutical and toxicological analysis, chemistry of natural and synthetic compounds, pharmaceutical kinetics, biological, clinical, social pharmacy, etc.), be able to plan individually innovative research and then implement it, develop modern research and analytical methods and approaches focused on developing new knowledge in pharmacy, critical analysis, synthesis and assessment of new and complicated controversial ideas and approaches, taking proper and efficient decisions for problem solving, getting involved in the debate on various topics of pharmacy, including, in the foreign language. They will express readiness for developing new ideas and processes in the process of studying, doing activities and research, competency of researching the ways of establishing values in pharmacy and the competence for researching the ways of establishing the values in pharmacy and developing innovative methods for their establishment.</p> <p>Academic (scientific) personnel are trained at the Medical University in accordance with the legislation in force and requirements of healthcare of the country/society. This is fully commensurate with the declared mission of the Medical University.</p>

	<p>Successfully going through the program ensures validity of the knowledge of program graduates and their competitiveness (within the scope of the competence).</p> <p>Study outcomes of the program envisage interests of all the parties in the academic process (PhD student/student, academic personnel), alumni and potential employers</p>
<p>Pre-requisites of the program</p>	<p>Enrollment to the program will be made after the candidates successfully pass exams in their specific fields (pharmacognosy, pharmaceutical and toxicological chemistry, pharmaceutical technology, social and clinical pharmacy, etc.) and the foreign language. To be able to get enrolled into the program, the student is required to be competent in the English language. The PhD candidate should have the MA or equivalent degree in pharmacy.</p>
<p>Learning Outcomes</p>	<p>Knowledge and Understanding</p> <p>Study outcomes of the program are fully commensurate with the knowledge and skills necessary for the independent researcher as well as the possibility of being employed within the scope of received competence.</p> <p>The graduate has knowledge based on most recent achievements in pharmacy and its sub-fields/directions, which enables him/her to further develop and apply innovative methods (at the level of standard necessary for international publications).</p> <p>The graduate has the knowledge of/possesses:</p> <ul style="list-style-type: none"> • Modern methods of extraction of biologically active substances from vegetable, animal and mineral raw material; • Modern spectral methods of identifying biologically active substances, defining their structure and standardizing them • Knowledge of the impact of

pharmaceutical factors, such as, physical and chemical condition of treatment medicines, the form of the medicine, technology, supplementary medicines, on the therapeutic efficiency of the medicine

- Is aware of the necessity of innovative understanding of the existing knowledge in pharmacy and updating/enriching this knowledge by means of reassessing it

Ability to apply knowledge to practice

The graduate is able to:

- Develop new/modified research and analytical methods and approaches in pharmaceutical technologies, pharmaceutical and toxicological analysis, pharmaceutical-kinetics, biological and social pharmacy, chemistry of natural and synthetic compounds, etc. which are focused on creating new knowledge and reflected in internationally refereed publications;
- Extraction of biologically active substances from vegetable, animal and mineral raw materials using modern methods;
- Identify biologically active substances, define their structure and standardize them using modern spectral methods and developing new methodologies;
- Studying the factors of pharmaceutical factors - physical and chemical condition of the treatment substance, the shape of the medicine, technology and supplementary substances - on therapeutic efficiency of the medicine and assessing them

Ability to make conclusions:

- Is able to critically analyze, synthesize and assess new ideas and approaches in pharmacy through which s/he supports development of new methodology;

- Makes independent decisions for solving the problem properly and efficiently in the areas of identifying endemic plants and studying them, developing new technologies, applying modern methods of analysis, conducting marketing research

Ability to communicate:

- Present a substantiated and clear verification of connection of the new knowledge with the old one
- Effectively get involved in the field-related debate with international scientific community
- Prepare/plan grant and other scientific projects and submit them as well as organize scientific forums or various scales

Values:

- To explain scientifically objective methods and innovative approaches of assessing the efficiency, quality and security of the medicine and establish them,

Ability to learn:

The graduate is able to:

- Continue activities and research based on the knowledge of most recent achievements in pharmacy with the view of developing new means for treatment and studying the existing ones in-depth;
- Plan and manage others' study process

Methods of achieving learning outcomes

The presented doctoral educational program is regarded as the integrated educational stage and unites the study component as well as the individual doctoral research programs, which correspond with various sub-fields/sub-directions of pharmacy.

The content, volume and teaching methods of the program ensure achievement of the aims and outcomes of the program as well as the

attainment of those programs which correspond with the outcomes of the third stage of the qualification framework of high education. Teaching methods are commensurate with modern methodological requirements of preparing the PhD candidate, including, specific ones. The program is built in accordance with the European credit-transfer system.

A separate method of academic activity as well as the unity of these methods ensures achievement of the outcomes envisaged by the PhD program, including, fulfilling the scientific component of the doctoral program by the candidate him/herself.

The research component of the doctoral program and the academic courses are based on modern scientific knowledge, which implies full and adequate inclusion of the knowledge and methodology accumulated in the field as well as the most recent ones, based on evidence into the academic learning process, which ensures attainment of the program study outcomes.

Learning is based on student-centered methods, which, besides the actual research work, incorporates active involvement of the PhD candidate into the learning process, case-based and problem-based learning (PBL), cooperative learning, case study analysis, role-plays and situational games, method of demonstration, practical methods, discussion-debates, group (collaborative) work, induction, deduction, analysis and synthesis, explanatory method, action-oriented learning, e-learning, etc. The PhD candidate is the actual participant in the research component.

System of assessing student knowledge	The research component of the doctoral program
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The Study Plan of the Doctoral Student

List of Activities	Academic			Semesters		
	I	II	III	IV	V	VI
Key Disciplines	X					
Bordering disciplines			X			
Biostatistics and basics of scientific research		X				
High education psychology and pedagogy	X					
Bioethics			X			
Foreign Language		X				

The academic component is, in its turn, composed of two types of academic courses and modules:

- 1) Focused on the knowledge and skills acquisition necessary for planning and efficient implementation of the academic/research process;
- 2) Focused on creating new knowledge/information in the area of the specific doctoral research on the basis of which it serves as the original research with scientific novelty having expressed scientific/methodological/practical value.

The teaching component (45 credits) consists of two parts:

- 1) Main and bordering areas/disciplines corresponding with the area of research – 25 credits (pharmacogenetics, pharmaceutical chemistry, pharmaceutical technology, instrumental methods of analysis, technological chemistry, social and clinical pharmacy, etc.), including, 15 credits – main discipline, 10 credits – related discipline/s.

The main and related field varies by the content of the research, is reflected in the syllabi accompanying the research project and serves as one of the criteria to assess the research.

- 2) Standardized courses and modules constituting the PhD program of pharmacy - 20 credits. The latter are focused on developing general scientific/academic competencies.

Distribution of Content and Amount of the Teaching Component of the PhD Program (45 credits) – 1 credit = 30 academic hours

Module Name	Amount of Credits
Main and related field	25
Biostatistics and basics of scientific research	4
Higher Education Pedagogy and Psychology	3
Bioethics	3
Foreign Language	10

