**AGREED**

**Educational and methodological association of Osh State University, chairman of the coordination council, Associate professor R.N.Arapbaev**

**"05" 07 2025**

**APPROVED**

**Rector of Osh State University, professor K.G.Kozhobekov**

**"05" 2025**

**OSH STATE UNIVERSITY**

# SECONDARY VOCATIONAL EDUCATION EDUCATIONAL STANDARDS

## SPECIALTY: 060110 Laboratory diagnostics

## Qualification: Laboratory technician

**Osh – 2025**



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Osh state university educational and methodological of the association Branch committee on medical education areas at the meeting, 2025 "14" May, with protocol No. 4 060110 Specialty: **Laboratory diagnostics** according to middle professional knowledge educational standard of delivery considered.

Osh state University teaching and methodical of the association Coordination advice by approved . The 2025 academic year proposed for approval by the Academic Council of Osh State University "30" June, protocol No. 9. Approved by order No. 3426 of the rector of Osh State University .

**The following foreign experts have provided opinions on the educational standards.**

1. Kurbanova D.I. - Head of the Department of Pharmacology, Clinical Pharmacology and Medical Biotechnology of the Andijan State Medical Institute, Candidate of Medical Sciences, Associate Professor.
2. Turdalieva G.Ch. - senior teacher of the Department of Biochemistry of KSMU named after B.N. Yeltsin.
3. Khandamov D.A. - Head of the Department of Analytical, Physical and Colloidal Chemistry of the Faculty of Chemical Technology of Inorganic Substances of the Tashkent Chemical-Technological Institute, Doctor of Chemical Sciences, Associate Professor.



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# CHAPTER 1. GENERAL PROVISIONS

The educational standard for training in the specialty **060110 Laboratory Diagnostics was approved by order of the rector of Osh State University.**

The educational standard for the educational program in the specialty **060110 Laboratory diagnostics was developed and approved at Osh State University, taking into account the requirements of secondary vocational education.**

The educational standard developed at Osh State University (hereinafter referred to as the educational standard) is aligned with state educational standards, has a unified structure of requirements for secondary vocational education, and allows them to fulfill their functions in terms of ensuring the unity and quality of education, objectivity of control, and also establishes specific requirements for the development of the educational program being implemented.

The requirements for the conditions and results of mastering basic vocational education programs in this educational standard are not lower than the corresponding requirements of the State Secondary Vocational Education Standards.

**The BPS for the specialty of laboratory diagnostics was developed with the participation of the following parties:**

**Chairwoman of the working group:**

1. Zhakieva V.T. - Head of the Department of Laboratory Diagnostics;

**Members:**

**I. The Medical College consists of:**

2. Orozaliev N.B. - teacher of the subject cyclical commission “General medical disciplines”;
3. Karimova N.A. – teacher of the subject cyclical commission “General medical disciplines”
4. Makambaeva G.B. - Teacher of the subject cyclical commission "General medical disciplines"
5. Nurmatova N.D. - Teacher of the subject cyclical commission "General medical disciplines"

**II . College teachers:**

6. Abdykadyrova R.K. – teacher at Osh Medical College;
7. Borkulova A.K. – teacher at Osh Medical College;
8. Sadirova G.B. - Teacher at Osh Medical College.
9. Arynova Aigul Ergeshovna – teacher at the Medical College of Osh State University;
10. Abdymalikova Minura Mannapovna – teacher at the Medical College of Osh State University.

**III . Employers:**

11. Nasyrov Abdymomun Nasyrovich – employee of the Laboratory of Microbiology, Virology and Immunology of the Institute of Mountain Physiology and Medicine of the National Academy of Sciences of the Kyrgyz Republic;
12. Isakova G.B. - Head of the Laboratory of the Osh City Clinical Hospital;
13. Burgoshova M.S. - Head of the Laboratory of the Osh City Children's Infectious Diseases Hospital;
14. Zhusupova B.K. - Head of Laboratory , Osh Interregional United Clinical Hospital ;
15. Abdillaeva G.Zh. - doctor, laboratory assistant at the Osh Interregional United Clinical Hospital ;

**IV** . From foreign universities:

16. Apekina V.A. - Kursk sh. Head of the laboratory of the OBSSM “KSHTZHKO”;
17. Arapbai uulu S. – Kursk city, doctor of the State Medical University of Medical Sciences “KSHTZKO”;
18. Mamedova RR. - Kursk city, OBSSM "KSHTZKO" doctor ;
19. Kemelbaeva Galiya Talgatovna – teacher at the Taldy - Korgon Higher Medical College under the Republic of Kazakhstan;
20. Akhmedov Marifkhan Mamathanovich , Director of the Pakhtaabad Medical College of the Republic of Uzbekistan.

This Educational Standard is in accordance with the Decree of the President of the Kyrgyz Republic No. 243 "On measures to increase the potential and competitiveness of secondary vocational education organizations of the Kyrgyz Republic" dated July 18, 2022, Resolutions of the Cabinet of Ministers of the Kyrgyz Republic No. 654 "On amendments to certain decisions of the Government of the Kyrgyz Republic on granting a special status to state secondary educational institutions", Resolutions of the Cabinet of Ministers of the Kyrgyz Republic No. 45 "On amendments to certain resolutions of the Government of the Kyrgyz Republic and the Cabinet of Ministers of the Kyrgyz Republic on granting a special status to state higher educational institutions", the Law "On Education" adopted on August 11, 2023 , Resolution No. 371 "On approval of the model of the state educational standard for primary, secondary and higher vocational education of the Kyrgyz Republic" dated July 8, 2024, the National Qualifications System, the National Qualifications Framework, the European Qualifications System, the Sectoral Qualifications Framework in the Kyrgyz Republic It is based on the framework, professional standards, and complies with the Charter of Osh State University and regulatory and local documents in force at the time of approval of the educational standard.

The procedure for developing, approving and amending this educational standard is regulated by the Regulation on the development, approval and amendment of educational standards at Osh State University.

## CHAPTER 2. ABBREVIATIONS

**SES** - state educational standard;
**ES** - educational standard ;
**SCC** – Subject Cycle Commission;
**HOLP** - health opportunities limited people ;
**TPI** - treatment and prevention institution ;
**HVE -** high vocational education;
**BVEP -** basic vocational education program;
**GPC -** general professional competence;
**PC** - professional competencies;
**GC** - general competencies;
**LO** - learning outcomes;
**Secondary vocational** education - secondary vocational education;
**EMA -** educational and methodological association;
**TPS -** teaching - professor staff ;
**OSCE** - objective structured clinical exam ;
**SPGCC -** socio-personal and general cultural competencies;
**TC** - selection course;
**RBHI** – regional budgetary health institution ;
**Kursk** City **Emergency** Clinical Hospital.

## SECTION 3. TERMS

The following terms and definitions are used in this independently developed educational standard for secondary vocational education.

- **Academic honesty** is a set of values and principles that establish standards of behavior in the mastering of educational programs and conducting educational activities, including writing assignments (tests, term papers, abstracts, dissertations), expressing one's position, and in relationships between participants in the educational process.

**academic freedom -** A set of powers granted to students and teachers to organize the content of education in elective disciplines, additional types of training, and educational activities in order to create conditions for the creative development of students and teachers and use innovative technologies and methods of teaching.

- ***basic curriculum*** – a catalog of disciplines for the full period of study that prepares a student for a profession in a direction or specialty (hereinafter referred to as the curriculum). The curriculum includes a mandatory component (basic and higher education (specialized)), regulates the number of credits allocated for the study of mandatory disciplines and disciplines of students' choice, establishes the duration and types of practice;
- ***distance learning*** - a form of independent learning (distance learning) using information technologies;
- ***online form of education*** - distance education using information technologies in real time;
- ***competence*** – social requirements (norms) set in advance in preparing a student (students) for education, necessary for the effective productive activity of a particular industry;
- ***credit*** - a conventional measure of labor intensity in a basic vocational education program;
- ***basic educational program*** - a set of educational and methodological documentation regulating the purpose, expected results, content and organization of the educational process for the preparation of a corresponding specialty;
- ***learning outcomes*** - competencies acquired as a result of learning in the main educational program/module;
- ***Credit technology of learning*** - learning based on the student's choice and independent planning of the sequence of studying disciplines with the accumulation of credits;
- ***independently developed competencies*** – competencies introduced by the developers of the standard;
- ***semester curriculum*** - a curriculum that serves to organize the educational process in a specific academic period (including calculating the labor intensity of teachers' teaching activities during the semester);
- ***Student's Individual Study Plan*** (SSP) - defines the student's study program for the semester, which is based on the academic disciplines offered for the semester;
- ***elective disciplines*** - academic disciplines that reflect the individual preparation of a student, included in the elective component within the framework of credits established by educational organizations, taking into account the characteristics of socio-economic development and the needs of a particular region;
- ***a form of networked education*** - the implementation of an educational program by several educational organizations;
- ***current regulations*** - regulations in force at the time of the development of this Regulation;
- effective communication and self-organization (self-discipline), creative and critical approach to non-standard situations;
- ***STEAM*** **skills – developing** science, technology, engineering, art, and math skills.

## CHAPTER 4. SCOPE OF APPLICATION

4.1. The educational standard (hereinafter referred to as the educational standard ) sets out the requirements for the development and implementation of basic vocational education programs in the specialty **060110 Laboratory diagnostics** of secondary vocational education .

4.2. SES establishes the requirements for training a specialist in the educational programs of the specialty **060110 Laboratory diagnostics and, as a result, a Laboratory Technician in the specified specialty** qualification is awarded.

4.3. The independently developed secondary vocational education standard for the implementation of educational technologies in preparation for the educational program in the specialty **060110 Laboratory diagnostics** serves as the basis for the development of basic curricula, working programs of academic disciplines, practices, and state final certification programs within the framework of the National Vocational Education and Training Commission.

4.4. The main users of the BBS are:

- **060110 Laboratory diagnostics** specialty to the educational program The basis for organizational and methodological documents in the development, implementation and teaching of basic educational programs of training. Also, the teaching and professorial staff of the educational organization in order to assess the quality of mastering the secondary vocational education program, supplement and update it taking into account the achievements of science, technology and the socio-economic environment, and systematically monitor the achieved learning results;
- Students of an educational organization for the effective implementation of learning activities in mastering the educational program in the specialty **060110 Laboratory diagnostics ;**
- The rector and vice-rectors of the educational organization, the educational and methodological association of the educational organization and its relevant sectoral committees, deans of faculties, directors of institutes and colleges, heads of departments, heads of departments, heads of departments, heads of the SSC, and others, who are responsible for the quality of graduate training and the organization of the educational process within their competence;
- examination and state final certification commissions that assess the academic achievements and quality of education of graduates of educational organizations;
- Employers in the relevant field of professional activity to determine the specialization (qualification) of graduates when hiring them;
- organizations that finance university, including secondary vocational education ;
- authorized organizations that carry out accreditation of educational programs in the field of education;
- representatives of state executive bodies responsible for ensuring compliance with the law and supervision in the education system, and implementing quality control in the field of secondary vocational education;
- applicants to choose specialties.

## CHAPTER 5. REGULATORY PERIOD AND LABOR CAPACITY FOR CURRICULUM ADJUSTMENT

5.1. Requirements for the level of education of applicants. An applicant must have one of the following documents when applying:

- certificate of basic general education;
- certificate of general secondary education;
- diploma of secondary vocational education;
- a diploma of primary vocational education (if a document of basic or general secondary education is available).

5.2.In accordance with this educational standard, the secondary vocational education program is implemented in the form of full-time study.

5.3. **060110 Laboratory Diagnostics** is 180 credit units, regardless of the form of training, educational technologies used, and the student's individual curriculum.

5.4. The normal duration of full-time education, including vacations granted after passing the state final certification of the OKB on the basis of general secondary education, is:

- on the basis of general secondary education – 2 years and 10 months;
- The established regulatory period for mastering the educational program based on basic general education will be extended by 1 (one) year.

5.5. The norms of the duration of education according to the student's individual curriculum are determined on the basis of the academic policy of the educational organization and regulatory documents on the organization of the educational process .

5.6. When organizing the learning process using credit education technology, the volume of each academic discipline is an integer number of academic credits. 1 academic credit is equal to 30 academic hours. The duration of an academic hour is set within 45 minutes.

5.7. The workload of all types of study work in the curricula is indicated in academic ECTS credits. The annual workload for the full-time form of study of the BVEP of secondary vocational education is 60 credits and the workload per semester is 30 credits.

5.8. The educational organization grants the right to persons with secondary vocational education or higher vocational education of the relevant profile to master the educational program according to accelerated programs, taking into account the recognition of previous knowledge and learning outcomes. The results of learning in certain previously mastered disciplines and/or certain types of on-the-job training are determined by the results of full or partial re-certification (re-crediting).

5.9. When the educational program is used online, regardless of the type of internship, it is not allowed to conduct (organize) the final state certification online. It is allowed only in exceptional cases.

5.10. When implementing a general secondary education program integrated into a secondary vocational education program (11th grade program), a document (certificate) on general secondary education is not issued; grades on general secondary education taught in college are recorded in the document (diploma) on secondary vocational education.

## SECTION 6. REQUIREMENTS FOR THE DEVELOPMENT AND IMPLEMENTATION OF THE BASIC EDUCATION PROGRAM

6.1. The educational organization independently develops educational programs for secondary vocational education, taking into account the needs of the labor market. The basic educational program is developed on the basis of the educational standard for the specialty, the national framework of qualifications, industry/sectoral frameworks of qualifications and professional standards (if any).

**6.2.** Secondary vocational education **The educational objectives** of the basic educational program in **the specialty 060110 Laboratory Diagnostics** :

They will be able to conduct all types of laboratory research and biological waste disposal in clinical diagnostic laboratories using modern medical devices and equipment, as well as samples, as well as obtain, register, store, deliver biological materials, organize a workplace, meet the requirements of the time, be competitive, professional, eager to actively participate in public activities, love their homeland, and be able to clearly express their thoughts in writing and orally;

**The goal of human education is:**

To educate students in politeness, determination, patience, responsibility, communication skills, dedication to their work, humanity, and neatness;

**professional activity Objective in the field** :

- healthcare - preserving and ensuring the health of the population, providing qualified diagnosis and assistance, improving the quality of life of patients, conducting preventive work with the population, organizing the work of laboratory technical personnel;
- Social services - caring for people in need.

6.3. The relevant structures of the educational organization are in the fields of science, culture, economy,

The National Curriculum for Higher Education shall be updated at least once every 5 (five) years, taking into account the development of technology, equipment and the social environment, in accordance with the proposals of interested parties. The updating of educational programs includes the following:

- develop a strategy to ensure the quality of graduate training;
- Periodic monitoring of educational programs;
- develop objective procedures for assessing the levels of knowledge and skills of students, as well as the competencies of graduates, based on the requirements for the competence of graduates agreed with the employer;
- ensuring the quality and competence of the teaching staff;
- providing the implemented educational program with sufficient resources and monitoring the effectiveness of their use;
- Conduct regular self-assessments against the minimum accreditation requirements established by the Cabinet of Ministers of the Kyrgyz Republic;
- to inform the public about the results of its work, plans, and innovations.

6.4. The educational organization implementing the educational program is obliged to:

- to create a socio-cultural environment;
- to create the necessary conditions for the comprehensive development and socialization of the individual, as well as for maintaining the health of students;
- to promote the development of educational/extracurricular components of the educational process, including the development of self-government, and the participation of students in the activities of public organizations, sports and creative clubs, and scientific student societies.

6.5. The educational organization (relevant structures of the educational organization) independently determines the set of disciplines (modules) and their content for each cycle of the educational program.
6.6. The set of disciplines of the BVEP should include a mandatory (basic) and an elective part. Elective courses are offered for the professional cycle, and the catalog of disciplines for it is determined by the educational organization (relevant structures of the educational organization).
6.7. The degree of compulsory nature of disciplines, the sequence of their mastery and the division of labor intensity into groups "A", "B" and "C" are organized in accordance with the regulations on the organization of the educational process of the educational organization and the appendices to this Model.
6.8. The educational institution is obliged to ensure that students have access to the NBBP courses (disciplines, modules), conduct introductory courses, and determine the student's elective courses and preferences through a survey to create an individual learning trajectory . The student creates his/her own individual study plan with the participation of an academic consultant provided by the educational institution.
6.9. When creating a BVEP, the educational organization is obliged to familiarize students with their rights and obligations, explain that the disciplines chosen by students are mandatory for them, and their total workload should not be less than that provided for in the curriculum.
6.10. An educational organization is obliged to take into account gender equality policies, ensure social inclusion, and develop digitalization when developing and implementing educational programs.
6.11. General requirements for the rights and obligations of students in the implementation of the educational program:

- Students have the right to choose specific disciplines within the scope of the study time allocated for mastering the disciplines of their choice within the framework of the educational program of higher vocational education;
- When creating their own personal educational trajectory, the student has the right to receive advice from the educational organization on the choice of disciplines and their impact on their future profession;
- In order to achieve results in mastering the educational program in the area of competence development, students have the right to develop student self-government, participate in the activities of public organizations, sports and creative clubs, and scientific student societies;
- Students are obliged to complete all tasks provided for in the educational program of the educational organization within the established time frame;
- The student's workload, including all types of classroom and extracurricular (independent) learning activities, is set at no less than 38 hours per week. The maximum weekly workload is set by the educational organization;
- In the full-time form of training, the volume of classroom lessons is not less than 35% of the total volume per week;
- The total length of the vacation period during the academic year should be 7-10 weeks, including at least two weeks in the winter, depending on the academic year.

## SECTION 7. CHARACTERISTICS OF PROFESSIONAL ACTIVITY OF GRADUATES OF THE 060110 LABORATORY DISEASE DETECTION EDUCATIONAL PROGRAM

**The areas of professional activity** of graduates of the educational program in the field of **060110 Laboratory diagnostics** include the following:

- biochemical analysis of blood and other biological fluids ;
- hematological research;
- immunological research;
- microbiological research;
- cytological and histological examination;
- molecular genetic research ;
- as well as conducting laboratory diagnostic tests on urine and feces, as well as allergy and autoimmune studies.

**7.2. 060110 Laboratory diagnostics** specialty *professional* **activities** of graduates of the educational program in **The objects** are **:**

- laboratory instrumental studies, devices, materials, documents.

laboratory studies;

- laboratory tools and equipment;
- samples of biological materials.

**7.3. 060110 Laboratory diagnostics** specialty according to Graduates of the educational program **"Laboratory Technician" Types of professional activities** that can be prepared for in the field of study with the award of qualifications :

1. Conducting general clinical laboratory tests;
2. Conducting hematological laboratory tests;
3. Conducting biochemical laboratory studies;
4. Conducting microbiological studies;
5. Conducting histological studies;
6. Conducting sanitary and hygienic studies;
7. Data processing and storage.

**Laboratory technician** in the specialty **060110 Laboratory diagnostics** The qualified specialist **is prepared to perform the following professional tasks , depending on the type(s) of professional activity** : a medical laboratory technician performs various tasks related to conducting laboratory research and maintaining order in the laboratory. He/she is engaged in taking samples from patients, conducting various laboratory studies, and also performs other tasks necessary for the functioning of the laboratory.

**1. Conducting general clinical laboratory tests:**

- taking samples from patients;
- maintenance of laboratory equipment;
- obtaining biomaterials for general clinical laboratory research;

**2. Conducting hematological studies:**

- blood test;
- bone marrow examination;
- coagulation factor testing.
- Determining the levels of various indicators in the blood **(** e.g., glucose, cholesterol, enzymes).

**3. Conducting biochemical laboratory studies:**

- determining the levels of various substances in the blood, such as proteins, carbohydrates, fats, enzymes, trace elements, and decomposition products.
- study of various parameters in the urine, including electrolytes, protein, glucose and other substances.
- analysis of other biological fluids: For example, biochemistry of ejaculate, saliva, feces

**4. Conduct microbiological studies;**

- study of microorganisms and their interactions with the environment and the organism;
- detection and identification of microorganisms, determination of their sensitivity to drugs, study of human microbiota.

**5. Conduct histological studies;**

- analysis of the microscopic structure of tissues obtained by biopsy or surgery;
- to help doctors make a diagnosis and determine the type of tumor.

**6. Conducting sanitary and hygienic studies;**

- assessing the quality and safety of various environmental objects, food products and other goods;
- determining the compliance of products and the environment with sanitary and hygienic requirements and standards.

**7. Data processing and storage.**

- development and storage of laboratory research data;
- data collection, processing, storage and analysis and decision-making;
- data processing, verification, quality control.

## CHAPTER 8. REQUIREMENTS FOR THE RESULTS OF THE 060110 LABORATORY DISEASE DETECTION EDUCATIONAL PROGRAM ADAPTATION

8.1. As a result of mastering the educational program, the graduate will have the following **general competencies: (JK)** should be formed.

| Directions | Competencies | Learning Outcome (LO) |
|---|---|---|
| **Language and communication skills** | PC-1: Makes public presentations; chooses the style and type of his speech and presents it, expresses and substantiates his opinion correctly, accurately in written and oral form, presents the results of research in a professional environment in Kyrgyz, Russian and foreign languages. | ON-1: They communicate in three languages: Conducts speech activities in a professional environment at the B2 level in Kyrgyz and Russian, and at the B1 level in one of the foreign languages. |
| **National and universal human values** | PC-2: Critically analyzes and evaluates personal and civic relations in their professional activities, is able to initiate and ensure the implementation of ideas aimed at improving the philosophy of statehood, civic identity, patriotism, and universal human and national values. | ON-2: Respects universal human and national values, preserves personal and national identity, is able to care for their development and dissemination, and has a personal and civic responsibility towards the interests of the state and the social environment. |
| **Soft skills** | PC-3: Generates new ideas and is able to adapt to innovations and unexpected situations in the external environment with creative thinking;<br><br>Thinks analytically and acts critically when organizing projects and conducting business. | ON-3: Able to generate ideas and think critically, integrate and analyze other points of view, think argumentatively and constructively in a professional environment, self-manage in non-standard situations in business, and use psychological stability and research skills. |

| | | |
|---|---|---|
| **STEM skills** | LC-4: Can use digital media texts, infographics, basic mathematical, engineering, scientific principles, and adapt to new trends in various business areas of the digital and creative economy; | ON-4: Uses modern information and telecommunications technologies and mathematical methods, and is flexible in responding to trends in the technical, digital, and creative economy. |

**8.2.060110** Laboratory diagnostics specialty Graduate of the educational program below **General professional competencies (GPC) must be possessed:**

| **General professional competencies** | |
|---|---|
| **GPC-1** | Able to search, interpret, and use information necessary for professional and personal development while effectively performing professional duties. |
| **GPC-2** | Ability to work with chemical formulas and equations, and acquire skills in applying chemical principles in practical work. |
| **GPC-3** | Understands the structure and function of the human body, its systems and organs, and the various parts of the body (anatomy) and functions (physiology), as well as the relationships between them. |
| **GPC-4** | Acquire the ability to successfully perform professional duties by studying and diagnosing diseases, pathophysiology, and characteristics of the course of various diseases using modern methods of clinical pathology. |
| **GPC-5** | To have the ability to recognize parasitic diseases, make proper diagnoses, and implement preventive measures. |
| **GPC-6** | Master the basic grammatical structures and words of the Latin language, understand the meaning of scientific and medical terms, and be able to use them correctly. |
| **GPC-7** | They will acquire knowledge of military affairs and basic methods of providing medical support to soldiers and providing self- and mutual aid in various situations, as well as skills for preparing for military service. |
| **GPC-8** | Knows the effects of drugs on the body, their absorption, distribution, metabolism, and excretion, as well as any side effects. |
| **GPC-9** | Possesses general skills in health-preserving activities until the ambulance arrives and can provide assistance in emergency situations. |
| **GPC-10** | Acquires the knowledge, various psychotherapeutic methods, communication, empathy and reflection skills necessary to perform professional duties, |
| **GPC-11** | Students will learn about heredity and variability, as well as the role of genetic factors in the development and prevention of diseases, methods of genetic research, diagnosis of hereditary diseases, and methods of genetic counseling. |

| | |
|---|---|
| **GPC-12** | Able to work with legal responsibility in professional activities using regulatory legal documents. |

**8.3.060110 –** specialty "Laboratory diagnosis" A graduate with the qualification " Laboratory Technician" **must have the following professional competencies (PC) in the diagnosis and treatment of diseases, depending on the type of professional activity:**

**Competencies in conducting general clinical laboratory research**

| Competencies | Content of the competence |
|---|---|
| **PC-1** | Able to take samples from patients and have the ability to maintain laboratory equipment. |
| **PC-2** | Possesses skills in obtaining biomaterials for general clinical laboratory research. |
| **PC-3** | The clinical diagnostic laboratory can perform all types of laboratory tests. |

**Competencies in conducting hematological studies**

| Competencies | Content of the competence |
|---|---|
| **PC-4** | Able to perform blood tests and acquire skills in bone marrow examination. |
| **PC-5** | They can test blood coagulation factors and have the ability to determine the levels of various indicators in the blood. |
| **PC- 6** | Collects, stores, and transports biomaterials for various laboratory studies. |

**Competencies in conducting biochemical laboratory research**

| Competencies | Content of the competence |
|---|---|
| **PC-7** | It has the skills to determine the levels of various substances in the blood, such as basic organic polymers, enzymes, trace elements, and decomposition products. |
| **PC-8** | It has the ability to study electrolytes, proteins, glucose, and other substances and their various parameters in urine and other body fluids. |
| **PC-9** | Prepares chemical solutions of various concentrations . |
| **KK-10** | Ability to work with laboratory equipment (FEC, analyzer, centrifuge, weighing scale, dispenser, automatic and glass pipettes). |
| **KK-11** | Able to prepare laboratory containers, equipment, instruments, devices needed for research, and consumable reagents. |

**Competencies in conducting microbiological research**

| Competencies | Content of the competence |
|---|---|
| **PC-12** | Preparation of biological samples for laboratory research for microscopic examination, including: preparation of the preparation, fixation, fixation, identification of cellular elements. |

| | |
|---|---|
| **PC-13** | They will identify and characterize microorganisms and their interactions with the environment and the body, their susceptibility to drugs, and acquire skills in studying the human microbiota. |
| **PC-14** | Able to perform processing, disinfection, sterilization of containers, instruments, and biomaterials. |

**Competencies in conducting histological studies**

| Competencies | Content of the competence |
|---|---|
| **PC-15** | It analyzes the microscopic structure of tissue obtained through biopsy or surgery and can help doctors make a diagnosis and determine the type of tumor. |
| **PC-16** | Knows how to distinguish between normal and pathological indicators in laboratory test results. |

**Competencies in conducting sanitary and hygienic research**

| Competencies | Content of the competence |
|---|---|
| **PC-17** | Able to organize laboratory work in accordance with the principles of safety when working with biological materials, samples from external environments, food products, laboratory utensils and equipment. |
| **PC-18** | Conducts sampling of environmental objects and food products. |
| **PC-19** | Able to organize the workplace in compliance with labor protection rules, sanitary-infectious and fire safety rules. |
| **PC-20** | Able to provide first aid in emergency situations and critical situations, consciously assess the situation and take preventive measures. |
| **PC-2 1** | Assesses the quality and safety of various environmental objects, food products and other goods, and can determine the compliance of products and the environment with sanitary and hygienic requirements and standards. |

**Competencies in data processing and storage**

| Competencies | Content of the competence |
|---|---|
| **PC-22** | Receives, labels, registers (including using a computer) materials, fills out analysis forms, protocols, research reports, and creates accounting documentation. |
| **PC-23** | Conducts and participates in quality checks within and between laboratories. |

## CHAPTER 9. 060110 LABORATORY DISEASE DETECTION EDUCATION REQUIREMENTS FOR PROGRAM IMPLEMENTATION

### 9.1. Personnel requirements for the implementation of the educational program

9.1.1. General requirements for staffing the educational process:

- The implementation of the NKBBP for the preparation of the educational program should be provided with pedagogical personnel whose basic education and/or qualification is completed in the specialty of secondary vocational laboratory diagnostics and continues to be no lower than a bachelor's, master's, specialist's degree, corresponding to the direction of the discipline being

taught, and who are systematically engaged in educational (scientific) and methodological activities;

- The share of full-time teachers in the total number of teachers of the educational program should not be less than 70%;
- The teacher/student ratio should not exceed 1:12 .

**9.1.2. Requirements for staffing the educational process in accordance with the specifics of the educational direction:**

- At least 30% of the teachers implementing the educational program must be from industry and/or relevant business sectors;
- Involvement of guest lectures by experienced domestic and/or foreign teachers (using online or offline learning formats) at least once during the academic year in the implementation of the educational program;
- When assessing the quality of teachers in the vocational cycle, employees with more than 10 years of experience in production are taken into account;
- knowledge broadcast program implementer professorship composition must improve their professional qualifications in the relevant field once every three years, and their pedagogical qualifications once every five years.
- Professional disciplines are taught by teachers with basic knowledge and/or qualifications in secondary vocational laboratory diagnostics and at least 5 years of experience, not lower than a bachelor's, master's, or specialist's degree.

**9.2. Requirements for educational, methodological and informational support of the educational process**

9.2.1. Requirements for the literature fund:

- **060110 Laboratory Diagnosis of Diseases,** each student must be provided with access to databases and library funds created for the full list of disciplines of the educational program;
- Each discipline should be provided with mandatory (core) and additional textbooks and methodological aids.
- A list of required textbooks and methodological tools: for humanitarian disciplines, those published within the last 5 years, and for special and general education disciplines in natural specialties, those published within the last 10 years should be submitted.
- The number of required textbooks and teaching aids must comply with the norm of 0.5 copies per student;
- Students must be provided with the necessary educational literature and/or electronic literature to implement the educational program. Sources of educational information must meet modern requirements;
- The educational process should use regulatory legal acts, local acts, and materials from professional periodicals;
- The provision of methodological tools for laboratory and practical work should be 1:1.
- Additional textbooks, reference books, and 5 copies of specialized periodicals should be provided for every 100 students.

9.2.2. Requirements for electronic textbooks:

- Mandatory and additional textbooks for each discipline (module) in the curriculum must be provided in the electronic library;
- The electronic library system should provide each student with access to the Internet and the school's digital platforms for using electronic textbooks (there should be enough seats in computer labs and methodological laboratories);
- Prompt exchange of information with domestic and foreign universities and organizations should be carried out in accordance with the requirements of the legislation of the Kyrgyz Republic on

intellectual property and international treaties of the Kyrgyz Republic in the field of intellectual property;

- Electronic versions of mandatory and additional educational literature for each academic discipline of the National Curriculum for Secondary Education should be available.

9.2.3. Requirements for placing electronic forms of educational and methodological materials (complexes) on the relevant digital platforms of the educational institution:

The teaching and methodological materials (complexes) of each academic discipline ( syllabus, assessment tools, etc.) must be posted on the educational institution's digital (electronic) platform before the start of the learning process .

**9.3. Requirements for the material and technical support of the educational process**

An educational organization implementing the basic vocational education program of secondary vocational education must have a material and technical base that ensures the implementation of all types of laboratory, disciplinary and interdisciplinary training, practical training of students, provided for in the curriculum, and complies with current sanitary and fire safety rules and regulations.

The implementation of the basic vocational education program in the specialty should ensure that the student performs laboratory and practical work, including practical tasks using personal computers, as a mandatory component. The usable area for 1 student should be at least 3 $m^2$.

**9.3.1. Special rooms (laboratory, language, computer, virtual, multimedia, etc.).**

Offices:

1. Kyrgyz (Russian) language (posters and stands)
2. Foreign language (posters and stands)
3. Medical terminology and basics of Latin (posters and stands)
4. Professional mathematics (posters and stands).
5. Information support in professional activities (posters and stands, computers).
6. Basic military medical training (posters and stands).
7. Legal support for professional activities (posters and stands).
8. Professional psychology (posters and stands).
9. Physical education (various equipment, posters and stands).
10. Ethics and deontology (posters and stands).
11. Fundamentals of Biology and Medical Genetics (posters and stands).
12. The role of biogenic elements in the human body (posters and stands).
13. Anatomy and physiology (posters and stands, human skeleton and its structural parts, dummies, phantoms).
14. Safety of work in clinical diagnostic laboratories (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory equipment).
15. Laboratory equipment 1 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory instruments).
16. Laboratory equipment 2 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory instruments).
17. Microbiology, fundamentals of epidemiology and methods of microbiological research 1 (posters and stands, microscopes, special micropreparations).
18. Microbiology, fundamentals of epidemiology and methods of microbiological research 2 (posters and stands, microscopes, special micropreparations).
19. Microbiology, fundamentals of epidemiology and methods of microbiological research 3 (posters and stands, microscopes, special micropreparations).
20. Microbiology, fundamentals of epidemiology and methods of microbiological research 4 (posters and stands, microscopes, special micropreparations).
21. Histology and histological equipment (posters and stands, microscopes, special micropreparations).
22. Hygiene and sanitary-hygienic research technology 1 (posters and stands, microscopes, special micropreparations).

23. Hygiene and sanitary-hygienic research technology 2 (posters and stands, microscopes, special micropreparations).
24. Hygiene and sanitary-hygienic research technology 3 (posters and stands, microscopes, special micropreparations).
25. Hygiene and sanitary-hygienic research technology 4 (posters and stands, microscopes, special micropreparations).
26. Hygiene and sanitary-hygienic research technology 5 (posters and stands, microscopes, special micropreparations).
27. Clinical laboratory research methods 1 (posters and stands, models, laboratory research objects, microscopes).
28. Clinical laboratory research methods 2 (posters and stands, models, laboratory research objects, microscopes).
29. Clinical laboratory research methods 3 (posters and stands, models, laboratory research objects, microscopes).
30. Methods of clinical laboratory research 4 (posters and stands, models, laboratory research objects, microscopes).
31. Methods of clinical laboratory research 5 (posters and stands, models, laboratory research objects, microscopes).
32. Fundamentals of biochemistry and methods of clinical - biochemical research 1 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory equipment).
33. Fundamentals of biochemistry and methods of clinical - biochemical research 2 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory equipment).
34. Fundamentals of biochemistry and methods of clinical - biochemical research 3 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory equipment).
35. Fundamentals of biochemistry and methods of clinical - biochemical research 4 (posters and stands, chemical reagents, glassware, microscopes, special micropreparations, laboratory equipment).
36. Chemistry (posters and stands, chemical reagents, glassware, microscopes, special micropreparations).
37. Fundamentals of General Clinical Pathology (posters and
stands, dummies, phantoms, demonstration tools, medical bandages,
splints, patient care items, tourniquets).
38. Medical parasitology (posters and stands).
39. Fundamentals of Toxicology (posters and stands).
microscope).
40. Fundamentals of Nursing (posters and stands).
41. Interactive whiteboard, projector.
42. Computer class.
43. Training Center:

**Across all clinical specialties:**

44. To watch video slides and thematic films
office (television, computer with internet connection).

**45. Sports complex:**

- gym,
- a wide-profile open stadium.

**46. Halls:**

- library, electronic library;
- a reading room with internet access;
- electronic library;

- hall for ceremonial meetings - 1;
- kitchen – 1.

**9.3.2. Conditions for training at the production base (on-the-job training):**

The educational organization must provide on-the-job training aimed at the acquisition of general and professional knowledge and skills by the student at the enterprise level, with the aim of practical training and strengthening professional knowledge and skills.

The NKBBP must develop and approve programs that include in-service training conducted at an enterprise or organization in relevant professional disciplines.

Training of a medical laboratory assistant at a production facility must take place in laboratories under the guidance of an experienced specialist. In this case, the student must have the opportunity to acquire practical skills, the ability to work with equipment and materials, and the ability to understand the principles of laboratory operation.

Students studying in the specialty **060110 Laboratory Diagnostics** **undergo internships in educational and industrial medical institutions in semesters 1-2-3-4-5-6.**

**9.4. Requirements for assessing the quality of education**

**9.4.1. Types of inspection:**

Assessment of the quality of training of students and graduates should include their current, intermediate, and final state certification.

Current certification of students is carried out during the academic semester based on the assessment system established by the educational organization implementing the educational program (approved by the Academic Council).

Mid-term certification of students is carried out each semester, and the results of the current certification for the semester in all disciplines/modules must be organized in accordance with the local acts of the educational organization.

**9.4.2. Evaluation fund and evaluation criteria:**

final state certification of the compliance of individual achievements of students with the staged or final requirements of the educational program .

According to the types of testing for each discipline, assessment tools and assessment criteria are developed before the start of the learning process and must be posted on the school's website for accessibility to learners.

**9.5. Requirements for organizing internships.**

**9.5.1. General provisions on practice:**

In the teaching of educational programs , internships for students are considered a form of the learning process that forms professional competencies in the preparation of a specialist. Each student is obliged to undergo (perform) the types of internships specified by the educational organization.

The educational organization must ensure that industrial practice is conducted in production facilities, clinical hospitals, disease prevention and state sanitary and epidemiological surveillance centers , depending on the direction and specialty of vocational education.

**9.5.2. The following types of internships are conducted in preparation for the educational program of secondary vocational education:**

1. Internship in a sanitary and hygienic laboratory to acquire basic professional skills;
2. Internship as a laboratory assistant in a clinical diagnostic laboratory;
3. Training and practical training as a laboratory assistant in histological and pathological-anatomical laboratories;
4. Training and practical training as a laboratory assistant in bacteriological, clinical and sanitary-hygienic laboratories;
5. Pre-qualification practice.

**9.5.3. Requirements for types of internships;**

**1.** Internship in a sanitary and hygienic laboratory, **receiving basic professional skills** master the methods of sanitary and hygienic research, learn to work with laboratory equipment and analytical methods, and also master the principles of the laboratory and its interaction with other departments. This type of practice should be carried out after completing the first section of the discipline "Hygiene and Sanitary and Hygienic Research Technology 1".

**2. Internship as a laboratory assistant in a clinical diagnostic laboratory:**

This type of internship should provide conditions for obtaining practical skills and knowledge in the field of laboratory diagnostics. In this case, the student should learn to conduct various analyzes, master the methods of working with laboratory equipment, as well as deepen the organization of laboratory work . This type of internship should be conducted after completing the discipline "Safety of work in clinical diagnostic laboratories".

**3. Training and practical training as a laboratory assistant in histological and pathological-anatomical laboratories:**

This type of internship prepares laboratory assistants in histology and pathological anatomy laboratories, and practical training is carried out on the basis of theoretical knowledge in histology, pathological anatomy, tissue sample processing and equipment use. In this case, the student should develop skills in histological preparations, section preparation, staining, microscopy and analysis.

should be completed after completing the discipline " Histology and Histological Techniques".

**4. Training and practical training as a laboratory assistant in bacteriological, clinical and sanitary-hygienic laboratories;**

This type of practice should be complex and aimed at obtaining practical training in bacteriological, clinical and sanitary-hygienic laboratories. For this , it should be carried out after completing the disciplines "Fundamentals of Microbiology, Epidemiology and Methods of Microbiological Research 1,2", Methods of Clinical Laboratory Research 1,2,3,4", "Hygiene and Sanitary-Hygienic Research Technology 1,2, 3,4", "Fundamentals of Biochemistry and Methods of Clinical-Biochemical Research 1,2,3".

**In the bacteriological laboratory:**

- In practice, students must be able to work with microorganisms, obtain and store cultures, determine the sensitivity of bacteria to antibiotics , prepare and sterilize media, and work with a microscope .

**In the clinical laboratory:**

- In practice, the student must learn how to draw blood, analyze blood and other biological fluids, work with automatic analyzers, handle samples, and follow safety rules .

**In the sanitary and hygienic laboratory:**

- In practice, students should learn to take samples of water, air, and soil, conduct chemical analysis, analyze the results, and draw conclusions .

5. **Pre-qualification internship** is considered the final stage of training and should be conducted in medical institutions, depending on the specialty, after students have fully mastered the theoretical and practical training program, in order to gain work experience and develop initial professional skills based on theoretical knowledge .

Internship before obtaining the qualification of a laboratory technician is the final stage of training, which allows students to acquire practical skills and knowledge in laboratory work necessary for future work. This type of internship is carried out after full mastery of the main professional disciplines.

The educational institution is obliged to provide the necessary documents for conducting the above types of internships.

**9.6. Final certification.**

**Requirements for the comprehensive final state exam and justification for the distribution of workload (number of credits):**

Final state certification of students should be carried out after completing the full course of study. The types of state certification exams and the procedure for their organization should be

determined by the educational organization in accordance with the regulatory legal acts of the Kyrgyz Republic and the educational organization regulating the conduct of final state certification of graduates.

A graduate who has no academic debt and has completed the full course of study provided for in the curriculum should be allowed to take the final state certification.

**9.6.1.** Requirements for the comprehensive final state certification and justification for the distribution of academic workload (number of credits):

Final state certification of graduates should be conducted in the form of a comprehensive state interdisciplinary exam in the specialty, which provides for the assessment of theoretical and practical professional training of a graduate in this specialty based on state requirements for the minimum content and level of training.

The final state certification should consist of two stages:

• Stage I – testing;

• Stage II – objective structured clinical examination (must be conducted in specially designated laboratory classrooms with video recording).

The comprehensive final state exam assesses the student's knowledge, theoretical and practical skills, clinical work experience, and must include at least 3 credits of coursework to prepare for tests, practical skills, and situational tasks.

The final grade should be based on the average results of the 2nd stage of the state final certification.

## CHAPTER 10. SAMPLE OF THE BASIC CURRICULUM OF THE EDUCATIONAL PROGRAM

| Blocks | Cycles | Cycle directions | Disciplines | Grouping of loans | | | Division of hours | | | 1st year of school | | 2nd year of study | | 3rd year of school | | 4th year of school | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | "A" | "B" | "C" | All | Audit. | SOI | 1st | 2nd | 3rd | 4th | 5th | 6th | 7th | 8th |
| Block 1 | 1st cycle. General Education (12 credits) | Language and communication skills | Kyrgyz language | | | | | | | | | | | | | | |
| | | | Russian language | | | | | | | | | | | | | | |
| | | | German | | | | | | | | | | | | | | |
| | | National and universal human values | Catalog discipline No. | | | | | | | | | | | | | | |
| | | STEM skills | Catalog discipline No. | | | | | | | | | | | | | | |
| | | Physical education | | | | | | | | | | | | | | | |
| | 2nd cycle. General vocational education | General professional disciplines | | | | | | | | | | | | | | | |
| | 3rd cycle. Vocational education | Professional disciplines | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| Block 2 | Internships | | | | | | | | | | | | | | | | |
| Block 3 | State final certification | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| The overall labor intensity of the educational program | | | | At least 180 credits | | | | | | | | | | | | | |

***Note:*** *The core curriculum will be developed according to this template using Appendices 1-3.*

The first block of the curriculum consists of 3 cycles: general education cycle , general vocational education cycle, and vocational education cycle.

The general education cycle is divided into areas (catalog of disciplines) called “Language and communicative skills”, “National and universal human values”, “Soft skills”, “STEM skills”. At least 3 disciplines are offered for each area, and the catalog of disciplines is determined by the educational organization. Students can independently choose the disciplines offered for the areas.

The academic disciplines of all cycles of the basic curriculum are divided into groups "A", "B", and "C" according to the degree of compulsory nature and the sequence of mastering the content :

"A" - disciplines that are mandatory to study in the semester specified in the basic curriculum, in which the sequence of disciplines is maintained.

"B" - the sequence of disciplines does not matter, they are mandatory. Students study the disciplines in this group independently, planning them in any semesters for the specified academic years.

The student can choose the disciplines in group “C” from the catalog at his/her own discretion. The semesters of the disciplines in this group must be clearly indicated in the curriculum. A catalog of disciplines is offered for group “C” and students can choose only one discipline from each catalog. Disciplines in one catalog must be related.

Group "C" students It allows students to deepen their knowledge of the disciplines in group "A" of the basic curriculum , acquire additional competencies to ensure the competitiveness of graduates, taking into account the requirements of the labor market and scientific and technological achievements.

Disciplines in group "C" may be updated each academic year, taking into account the requirements of the labor market and scientific and technological achievements.

**Appendix 1**

Provide **secondary vocational medical education** **Distribution of the total workload of the basic curriculum**

**for**

| **Structure of the educational program** | | | **Workload (credits) of educational program blocks** | | |
|---|---|---|---|---|---|
| **1-b lock** | **Discipline** | | **"A"** | **"B"** | **"C"** |
| | | | 104-1 58 kr edit | | |
| | Cycle | General education disciplines | | 12 credits | |
| | | Professional cycle | 92- 146 kr edits | | |
| | | General professional disciplines | 15%-25% | 6%-10% | |
| | | Professional disciplines | 50%-6 0% | 20%-25% | 20%-25% |
| | Physical education | | 72-120 hours | | |
| **2nd place** | **Practice** | | 20-70 kr edit | | |
| **3-b lock** | **Final state certification** | | 2- 4 kr . | | |
| **Overall workload of the educational program** | | | **180 not less than credit** | | |

**Appendix 2**

**Provide secondary vocational medical education compulsory disciplines in the basic curricula by cycles distribution and labor intensity**

| Blocks | Cycles | Cycle directions | Disciplines | Grouping of loans | | | Division of hours | | | 1st year of school | | 2nd year of study | | 3rd year of school | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | "A" | "B" | "C" | All | Audit. | SOI | 1st semester | 2nd semester | 3rd semester | 4th semester | 5th semester | 6th semester |
| Block 1 | 1st cycle. General education (12 credits) | Language and communication skills | | | 4 | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | National and universal human values | | | 4 | | | | | | | | | | |
| | | Soft skills | | | | | | | | | | | | | |
| | | STEM skills | | | 4 | | | | | | | | | | |
| | | Physical education | | | | | | | | | | | | | |
| | 2nd cycle. General vocational education | General professional disciplines | | | | | | | | | | | | | |
| | 3rd cycle. Vocational education | Professional disciplines | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| Block 2 | Internships (20-70 credits) | | | | | | | | | | | | | | |
| Block 3 | State final certification (2-6 credits) | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| The overall labor intensity of the educational program | | | | | | | | | | At least 180 credits | | | | | |

**Appendix 3**

## Catalog of core curriculum disciplines

***Note** : Disciplines in the "discipline catalog" of the general education cycle are selected by the student .*

| Catalog no | Catalog direction | Names of disciplines in the catalog | Loan amount |
|---|---|---|---|
| 1st catalog of disciplines | Language and communication skills (foreign languages) | english language | 4 |
| | | Chinese language | |
| | | Korean language | |
| | | German language | |
| 2nd catalog of disciplines | National and universal human values orientation to weave | History of the homeland, national values, and culture | 4 |
| | | Faith | |
| | | Environmental safety in the professional environment | |
| | | Studying Manas... | |
| 3rd catalog of disciplines | Soft skills | Project workshop | |
| | | Critical and design thinking | |
| | | Medical psychology basics and entering the profession | |
| | | | |
| 4th catalog of disciplines | STEM skills | Network mathematics | 4 |
| | | Digital technologies in professional activities | |
| | | | |
| | | | |

**The BPS for the specialty of laboratory diagnostics was developed with the participation of the following parties:**

**Chairwoman of the working group:**

1. Zhakieva V.T. _____ Head of the Department of Laboratory Diagnostics;

**Members:**

**I. The Medical College consists of:**

2. Orozaliev N.B _____ teacher of the subject cyclical commission "General medical disciplines";
3. Karimova N.A. _____ teacher of the subject cyclical commission "General medical disciplines"
4. Makambaeva G.B. _____ Teacher of the subject cyclical commission "General medical disciplines"
5. Nurmatova N.D. _____ Teacher of the subject cyclical commission "General medical disciplines"

**II . College teachers:**

6. Abdykadyrova R.K. _____ teacher at Osh Medical College;
7. Borkulova A.K. _____ teacher at Osh Medical College;
8. Sadirova G.B. _____ Teacher at Osh Medical College.
9. Arynova Aigul Ergeshovna _____ teacher at the Medical College of Osh State University;
10. Abdymalikova Minura Mannapovna _____ teacher at the Medical College of Osh State University.

**III . Employers:**

11. Nasyrov Abdymomun Nasyrovich _____ employee of the Laboratory of Microbiology, Virology and Immunology of the Institute of Mountain Physiology and Medicine of the National Academy of Sciences of the Kyrgyz Republic;
12. Isakova G.B. _____ Head of the Laboratory of the Osh City Clinical Hospital;
13. Burgoshova M.S. _____ Head of the Laboratory of the Osh City Children's Infectious Diseases Hospital;
14. Zhusupova B.K. _____ Head of Laboratory , Osh Interregional United Clinical Hospital ;
15. Abdillaeva G.Zh. _____ doctor, laboratory assistant at the Osh Interregional United Clinical Hospital

**Working group composition that developed the standard of secondary vocational education by staff from foreign universities (colleges)**

| № | Workplace and Position | Signature | Full Name |
|---|---|---|---|
| 1. | Regional Budgetary Healthcare Institution of the Russian Federation. Kursk City Clinical Emergency Hospital. Head of Laboratory. | | Apekina V.A. |
| 2. | Regional Budgetary Healthcare Institution of the Russian Federation. Kursk City Clinical Emergency Hospital. Doctor. | | Arapbay uulu S. |
| 3. | Regional Budgetary Healthcare Institution of the Russian Federation. Kursk City Clinical Emergency Hospital. Doctor. | | Arapbay uulu S. |
| 4. | Taldykorgan Higher Medical College of the Republic of Kazakhstan. Lecturer. | | Kemelbayeva G.T. |
| 5. | Republic of Uzbekistan. Pakhtaabad Medical College. Director. | | Akhmedov Marifkhan Mamatkhanovich |