



# "West Kazakhstan Marat Ospanov Medical University"

MASTER'S EDUCATIONAL  
PROGRAM

7M10105 "BIOMEDICINE"



ЗАПАДНО-КАЗАХСТАНСКИЙ  
МЕДИЦИНСКИЙ УНИВЕРСИТЕТ  
имени Марата Оспанова



# **Mission of the educational program**

training of highly qualified competitive scientific and pedagogical personnel and specialists with interdisciplinary knowledge in the fields of life sciences, a fundamental understanding of medical science, possessing the skills of research work, able to improve the quality of human life and act in a rapidly changing world

# **Purpose of the educational program**

training of highly qualified scientific and pedagogical personnel with general and professional competencies for scientific, pedagogical and research activities in educational and scientific organizations

# Objectives of the educational program

- achieving a high quality of education by deepening the theoretical and practical individual training of the chosen area of biomedicine and pedagogical activity (synthesis of professional, scientific knowledge and experience in the field of biomedicine);
- assessment and selection of professional information, development of new applied knowledge by undergraduates, providing a holistic perception of the scientific direction of biomedicine;
- acquisition of skills and abilities to scientifically substantiate the setting of goals and the choice of methods and means to achieve them, as well as the skills to correct the activities of a unit or organization;
- training of specialists with a high level of professional culture, capable of formulating and solving modern scientific and practical problems, teaching in educational institutions;
- successfully carry out research and management activities (managing the activities of employees with the assumption of responsibility for the result at the level of the unit or organization; determining the strategy for the activity of the unit or organization);
- providing undergraduates with fundamental knowledge at the intersection of sciences, guaranteeing them professional mobility in the real developing world;
- acquisition of skills in organizing and conducting scientific research, obtaining the necessary groundwork for continuing scientific work in doctoral studies.

# PRIOR EDUCATIONAL REQUIREMENTS

Master's degree in educational program 7M10105 "Biomedicine" persons who have mastered professional training programs are accepted:

higher professional education in medical specialties,  
higher professional education in natural sciences

# EDUCATIONAL PROGRAM

**Duration of study** under the program of scientific and pedagogical magistracy is 2 years.

The content of the educational program of the master's program consists of:

- 1) theoretical education, including the study of cycles of basic and major disciplines (74 credits);
- 2) practical training of undergraduates: pedagogical practice (4 credits), research practice (6 credits)
- 3) research work, including the implementation of a master's thesis for a scientific and pedagogical magistracy (24 credits);
- 4) final certification (12 credits)

120 credits /3600h

# Learning outcomes:

General competencies	Learning Outcomes for each competency
<b>Critical thinking</b>	<p>Capable</p> <p>Demonstrate the skills of conducting a systematic search and critical analysis of information. Integrate knowledge of different disciplines, expand and deepen the knowledge necessary for professional activities and continuing professional education.</p>
<b>Communication</b>	<p>Applies knowledge of professional communication and communication, correct and logical formulation of his thoughts in oral and written form; owns the skills of public speech, argumentation, discussion and polemics.</p> <p>Effectively communicates information to both professionals and non-specialists in their area of expertise.</p>
<b>Research in biomedicine</b>	<p>Generate ideas based on the analysis of scientific data, industry trends and critical reflection on their prospects for improving human health.</p> <p>Integrate knowledge of the fundamental principles of the functioning of biological systems and advanced technological and methodological principles of their study to solve problems in the field of improving human health.</p> <p>Create new ways to solve problems by synthesizing and reorganizing evidence-based information and research.</p> <p>Expand and deepen the knowledge necessary for professional activities.</p> <p>Analyze the patterns of functioning of individual organs and systems, use the basic methods for assessing the functional state of the human body (for diagnostic and subsequently more successful therapeutic activities).</p>



# Learning outcomes:

General competencies	Learning Outcomes for each competency
<b>Leadership and Management</b>	<p>Capable</p> <p>Apply knowledge of management psychology in their professional activities. Ensure that scientific and research practices comply with ethical and scientific quality standards at all stages.</p> <p>Show leadership in order to achieve the best results and improve the quality of professional practice.</p>
<b>Pedagogy</b>	<p>Capable</p> <p>Critically assess their activities and update knowledge and skills in the changing context of biomedical science and practice, necessary for daily professional activities (including for teaching professional disciplines).</p> <p>Organize a high-quality educational process within the subject area using modern information technologies and strategies.</p>

# Qualification characteristic

Persons who have mastered the educational program of the master's program and successfully passed the final certification are awarded the academic degree "Master of Medical Sciences" in the educational program "7M10105 Biomedicine"

# **Master students will be trained on theoretical and clinical departments**



Natural science disciplines Social and humanitarian  
disciplines Department of Languages (English)

**Clinical laboratory and visual  
diagnostics Evidence-based medicine  
and scientific management**

# Scientific achievements of scientific supervisors

<b>Namemagazine</b>	<b>Impact factor</b>
<b><u>Diabetes Res Clin Pract.</u></b>	<b>7.7</b>
<b><u>scientific reports</u></b>	<b>7.1</b>
<b><u>European Journal of Pharmacology</u></b>	<b>5.eight</b>
<b><u>Advances in Clinical and Experimental Medicine</u></b>	<b>2.7</b>
<b>Pregnancy Hypertension</b>	<b>2.1</b>
<b>Journal of Environmental Management and Tourism</b>	<b>2.1</b>
<b>Gynecol Obstet Invest.</b>	<b>2.3</b>
<b>ADVANCES IN CLINICAL AND EXPERIMENTAL MEDICINE</b>	<b>1.7</b>
<b>Medical Journal of the Islamic Republic of Iran</b>	<b>1.5</b>
<b>Open Access Macedonian Journal of Medical Sciences</b>	<b>1.1</b>
<b><u>International Journal of High Risk Behaviors and Addictions</u></b>	<b>1.1</b>
<b><u>Ekologiya Cheloveka (Human Ecology)</u></b>	<b>0.7</b>

# EDUCATIONAL TRAJECTORY Modular curriculum

## Module 1. General education -20 credits (600 hours)

History and philosophy of science 3/90

Management psychology 3/90

Foreign language (professional) 5/150

Pedagogy of higher education 4/120

Management psychology 4/120

Teaching practice 4/120

# EDUCATIONAL TRAJECTORY Modular curriculum

**Unit 2 Organization of scientific research using modern technologies - fifteen credits (450 h)**

Biomedical statistics 5/150

Methodology and research design in biomedicine 4/120

Ethics of scientific research 3/90

Fundamentals of Academic Writing 3(90) / Preparing a Master's Study 3(90)

**Module 3. Systems biology and biomedicine - 33 credits (990 h)**

Genomics, proteomics 7(210) / Biophysics with basics of biomedicine 7(210)

Cellular and molecular pathobiology 5/150

Project management in biomedicine 11/330

Modern methods of laboratory research 10/300

# **EDUCATIONAL TRAJECTORY Modular curriculum**

**Pedagogical practice 4 credits (120 hours)**

**Modules of PD CV Cycle of major disciplines**  
**Optional component (determined by the topic of the master's thesis)**  
**10 credits (300 hours)**

**Research practice 6 credits (180 hours)**

**Research work of a master student, including an internship and a master's thesis**  
**(NIRM)**  
**24 credits (720 hours)**

**final examination**  
**Registration and defense of a master's thesis**  
**12 credits (360 hours)**

# Innovative technologies



**TBL (team based learning)**

**PBL (problem based learning)**

**discussion groups, brainstorming**

**individual-pair-group form of student interaction ("think-pair-share"), and "clickers" (student response system)**

**Remote technologies(Moodle, Zoom)**



# Pedagogical practice



it will be aimed at consolidating and deepening the knowledge and skills acquired in the learning process, as well as mastering the system of pedagogical skills and acquiring professional experience in the specialty being studied

# Research practice is planned

At the departments of the  
WK Marat Ospanov  
MU



in the laboratories of the  
Scientific and Practical  
Center of the WK Marat  
Ospanov MU



# It is planned to conduct a scientific internship at partner universities

