


**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS**  
Educational Institution  
«BELARUSIAN STATE MEDICAL UNIVERSITY»

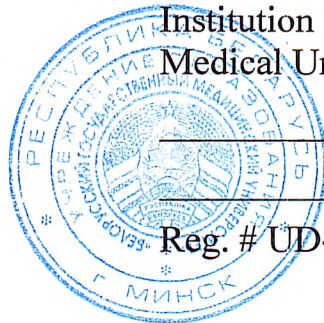
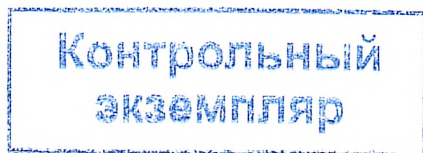
**APPROVED**

by Rector of the Educational  
Institution «Belarusian State  
Medical University»

 S.P. Rubnikov

26.06.2025

Reg. # UD-0911-01-46/252/edu.



**PROFESSIONAL DISEASES**

**Curriculum of the educational institution  
in the academic discipline for the specialty**

**1-79 01 01 «General Medicine»**

Curriculum is based on the educational program «Professional Diseases», approved 26.06.2025, registration # УД-0911-01-46/2526/уч.; on the educational plan in the specialty 1-79 01 01 «General Medicine», approved 16.04.2025, registration # 7-07-0911-01/2526/mf.

### **COMPILERS:**

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A.Y.Krumkacheva, Senior Lecturer of the Department of Internal Diseases, Gastroenterology and Nutrition with a course of advanced training and retraining of the Educational Institution «Belarusian State Medical University»

### **RECOMMENDED FOR APPROVAL:**

by the Department of Internal Medicine, Gastroenterology and Nutrition with a course of advanced training and retraining of the Educational Institution «Belarusian State Medical University»  
(protocol # 13 of 30.04.2025);

by the Scientific and Methodological Council of the Educational Institution «Belarusian State Medical University»  
(protocol # 10 of 26.06.2025)

## EXPLANATORY NOTE

«Professional Diseases» – the educational discipline of the module «Internal Diseases», which contains systematized scientific knowledge about the etiology, pathogenesis, clinical manifestations, methods of diagnosis, treatment and prevention, medical and social expertise (MSE) of diseases caused by unfavorable working conditions (occupational diseases).

The aim of the discipline «Professional Diseases» is the formation of specialized competencies for building a clinical diagnosis, providing medical care, medical prevention of diseases caused by unfavorable working conditions, solving issues of MSE, medical and professional rehabilitation of patients.

The objectives of the discipline «Professional Diseases» consist in the formation of students' scientific knowledge about the patterns of the impact of factors of the working environment on human health; etiology, pathogenesis, morphological features, clinical manifestations, methods of diagnosis, treatment and prevention, features of the MSE of diseases caused by unfavorable conditions of the labor process; skills and abilities necessary for:

- interpretation of data on sanitary and hygienic working conditions, determination of the class of working conditions and the risk of developing occupational diseases;

- clarification of professional anamnesis;

- patient examinations;

- interpretation of the results of laboratory and instrumental research methods;

- building a diagnosis;

- prescription of treatment;

- medical prevention;

- conducting MSE for patients with an occupational disease, drawing up a rehabilitation program for the victim (RPV) as a result of an accident at work or an occupational disease.

### **Relations to other educational disciplines**

The knowledge, skills and abilities acquired during the study of the academic discipline «Professional Diseases» are necessary for successful mastering of the following educational disciplines: «Clinical Immunology, Allergology», «Internal Diseases».

Studying the educational discipline «Professional Diseases» should ensure the formation of students specialized competencies: provide primary and specialized medical care in cases of internal organs pathology, including urgent and life-threatening conditions, occupational diseases; conduct medical and social expertise of internal organs pathology, including occupational diseases; apply methods of tests interpretation for the diagnosis of autoimmune and allergic diseases, laboratory and immunological control data assessment during pathogenetic therapy.

**As a result of studying the discipline «Professional Diseases» the student should**

**know:**

- etiology, pathogenesis, clinical manifestations, diagnosis, principles of treatment and medical prevention, MSE, rehabilitation of occupational diseases;

rules of medical ethics and deontology;

**be able to:**

analyze regulatory legal acts governing legal relations related to the provision of medical care to patients with occupational diseases;

collect patient complaints,

clarify professional anamnesis;

evaluate the sanitary and hygienic characteristics of the workplace, extracts from medical documents;

draw up a survey plan;

examine the patient and assess the detected changes in various organs and organ systems;

interpret the results of laboratory and instrumental research methods;

choose treatment tactics;

prescribe individual pharmacological treatment taking into account the mechanism of action, pharmacokinetics and pharmacodynamics of drugs, prevention of their undesirable side effects, possible interaction with concomitant administration of other drugs;

work with medical documentation, draw up a medical record of an inpatient;

to assess the criteria for the degree of limitation of vital activity and social insufficiency, professional working capacity;

to draw up medical, professional, social sections of the victim's rehabilitation program;

use educational, scientific, reference literature;

ensure epidemiological safety in the provision of medical care;

**master:**

skills in interviewing a patient with occupational diseases;

skills of objective examination of patients;

skills of clinical interpretation of the results of laboratory and instrumental research methods;

methodology for the examination of acute and chronic occupational diseases.

**Total number** of hours for the study of the discipline is 54 academic hours, of which 33 classroom hours and 21 hours of student independent work. Classroom hours according to the types of studies: lectures – 9 hours (including 3 hours of supervised student independent work (SSIW)), practical classes –24 hours.

Intermediate assessment is conducted in accordance with the curriculum for the specialty in the form of an exam (10th semester) in the academic disciplines «Internal Medicine» and «Occupational Diseases» of the «Internal Medicine» Module.

Form of higher education – full-time.

**ALLOCATION OF ACADEMIC TIME  
ACCORDING TO SEMESTERS OF STUDY**

Code, name of the specialty	Semester	Total number of academic hours	Number of classroom hours				Out-of-class self-studies	Form of intermediate assessment
			number of classroom hours	including				
				class lectures	SSIW	practicals		
1-79 01 01 «General Medicine»	10	54	33	6	3	24	21	exam

**THEMATIC PLAN**

Section (topic) name	Number of class hours	
	lectures (incl. SSIW)	practical
1. Organization of the occupational pathology service of the Republic of Belarus. Procedure for establishing and investigating occupational diseases. Medical and social expertise for occupational diseases, rehabilitation program for the victim	1,5	6
2. Occupational diseases of the respiratory system	4,5	6
3. Occupational diseases caused by exposure to physical factors: vibration disease and sensorineural hearing loss	1,5	6
4. Occupational diseases caused by exposure to chemical factors: occupational intoxication with aromatic hydrocarbons and lead	1,5	6
<b>Total hours</b>	<b>9</b>	<b>24</b>

## **CONTENT OF THE EDUCATIONAL DISCIPLINE**

### **1. Organization of the occupational pathology service of the Republic of Belarus. Procedure for establishing and investigating occupational diseases. Medical and social expertise for occupational diseases, rehabilitation program for the victim**

Tasks and organization of the occupational pathology service of the Republic of Belarus. Classes of working conditions. Classification of occupational diseases. List of occupational diseases.

Topical issues of medical ethics and deontology. Principles of formation of the personality of a medical worker. Basic models of doctor-patient communication. Features of deontology in occupational diseases.

Procedure for establishing an acute occupational disease.

Procedure for establishing a chronic occupational disease. Documents required for issuing an expert opinion on the occupational nature of the disease: extract from medical documents; information on the results of preliminary (upon employment), periodic (during employment) and extraordinary medical examinations; sanitary and hygienic characteristics; a copy of the employment record book. Tasks of the Republican Center for Occupational Pathology and Allergology of the Ministry of Health of the Republic of Belarus (RCPiA). Regulations on the Medical Expert Commission. Rules for investigation and registration of accidents at work and occupational diseases.

Features of the work of the medical rehabilitation expert commission (MREC) for occupational diseases. The degree of limitation of vital activity and social insufficiency. The concept of functional classes. Rules for determining the degree of loss of professional working capacity and disability group as a result of occupational diseases.

Rehabilitation and its types. Drawing up a victim rehabilitation program (RPV).

Conducting mandatory and unscheduled medical examinations of employees. Occupational diseases of medical workers.

Supervision of patients with occupational diseases: work with documentation (documents when referring to the RCPiA, the results of dynamic observation based on the materials of the outpatient's medical record); collection of complaints, professional anamnesis, medical history, life history, objective examination of the patient, drawing up an examination plan, interpretation of the results of laboratory and instrumental examination methods, substantiation of the diagnosis of an occupational disease, differential diagnosis, registration of a referral to the RCPiA, preparation of a RPV.

### **2. Occupational diseases of the respiratory system**

Pneumoconiosis: definition, classification, characteristics. Pneumoconiosis from exposure to highly and moderately fibrogenic types of dust (silicosis, silicotuberculosis). Pneumoconiosis from weakly fibrogenic types of dust (silicatoses, carboconiosis, pneumoconiosis from exposure to welding aerosol). Pneumoconioses

developing from exposure to toxic-allergic aerosols (berylliosis, aluminosis, farmer's lung and other hypersensitive pneumonitis).

Silicosis: pathogenesis, features of clinical manifestations and course, X-ray diagnosis, complications, diagnosis criteria.

Principles of treatment of pneumoconiosis. Features of MSE and medical rehabilitation in pneumoconiosis. Medical prevention of pneumoconiosis.

Chronic occupational bronchitis and chronic obstructive pulmonary disease (COPD): definition, characteristics of etiological factors, pathogenesis scheme. Clinical features of chronic occupational bronchitis and COPD from exposure to industrial aerosols, classification, diagnostic criteria, differential diagnosis, treatment, MSE, medical prevention.

Occupational bronchial asthma: definition, characteristics of etiological factors, classification, pathogenesis scheme, features of the clinical course, diagnostic criteria, treatment, MSE, medical prevention.

Supervision of patients with occupational respiratory diseases: analysis of occupational history, content of the sanitary and hygienic characteristics of the workplace, establishment of the class of working conditions; analysis of the patient's complaints, medical history, life, data of objective, instrumental and laboratory research methods. Substantiation of the diagnosis of an occupational disease, differential diagnosis, preparation of a treatment plan and RPV.

### **3. Occupational diseases caused by exposure to physical factors: vibration disease and sensorineural hearing loss**

Vibration disease: definition, pathogenesis, characteristics of etiological factors, industries, professions. Classification of vibration sickness from local, general, combined impact. Clinical characteristics of the main syndromes of vibration disease, their differential diagnosis, diagnostic criteria. Treatment of vibration sickness, MSE and medical prevention.

Sensorineural hearing loss: definition, characteristics of etiological factors, industries, professions. Pathogenesis, classification, clinical manifestations. Differential diagnosis, diagnostic criteria. Treatment of sensorineural hearing loss, MSE and medical prevention.

Supervision of patients with vibration disease, sensorineural hearing loss: analysis of occupational history, the content of the sanitary and hygienic characteristics of the workplace, the establishment of a class of working conditions; analysis of the patient's complaints, medical history, life, data of objective, instrumental and laboratory research methods. Substantiation of the diagnosis of an occupational disease, differential diagnosis, preparation of a treatment plan and RPV.

### **4. Occupational diseases caused by exposure to chemical factors: occupational intoxication with aromatic hydrocarbons and lead**

Chemicals as a Cause of Acute and Chronic Occupational Diseases. Classification of occupational poisoning. Clinical and pathogenetic classification of occupational poisoning of the blood system.

Occupational intoxication with aromatic hydrocarbons: definition of the concept. Chemical features of benzene, its homologues. List of industries and professions at risk of developing poisoning with aromatic hydrocarbons, the main

mechanisms of the development of acute and chronic poisoning. Clinical and laboratory manifestations of specific and non-specific syndromes, long-term consequences of intoxication, diagnostic criteria, treatment of acute and chronic poisoning. MSE and medical prevention of intoxication with aromatic hydrocarbons.

Chronic lead intoxication: definition of the concept. Characteristics of industries and professions in occupational lead poisoning. Pathogenesis of lead intoxication. Characteristics of specific and non-specific syndromes of lead intoxication, clinical and laboratory diagnostic criteria, assessment of the provocation test, etiotropic antidote therapy. Pathogenetic treatment of lead intoxication. MSE and medical prophylaxis for occupational lead intoxication.

Supervision of patients with diseases caused by exposure to chemical factors (lead, aromatic hydrocarbons): analysis of professional anamnesis, the content of the sanitary and hygienic characteristics of the workplace, establishment of the class of working conditions; analysis of the patient's complaints, medical and life history, data of objective, instrumental and laboratory research methods. Substantiation of the diagnosis of an occupational disease, differential diagnosis, preparation of a treatment plan and RPV.

## EDUCATIONAL DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	Number of class hours		Supervised student independent work	Literature	Practical skills	Form of control	
		lectures	practical				of practical skills	of current / intermediate assessment
	<b>Lectures</b>	<b>6</b>	<b>-</b>	<b>3</b>				
1.	Organization of the Occupational Pathology Service of the Republic of Belarus. Procedure for Establishing and Investigating Occupational Diseases. Medical and social expertise for occupational diseases, rehabilitation program for the victim	-	-	1,5	1, 2, 7			Survey, testing
2.	Pneumoconiosis: silicosis	1,5	-	-	1, 2, 7			
3.	Occupational bronchitis and chronic obstructive pulmonary disease	1,5	-	-	1, 2, 7			
4.	Occupational bronchial asthma	1,5	-	-	1, 2, 7			
5.	Occupational diseases caused by exposure to physical factors: vibration disease and sensorineural hearing loss	-	-	1,5	1, 2, 7			Survey, testing
6.	Occupational diseases caused by exposure to chemical factors: occupational intoxication with aromatic hydrocarbons and lead	1,5	-	-	1, 2, 7			
	<b>Practical lessons</b>							
1.	Organization of the Occupational Pathology Service of the Republic of Belarus. Procedure for Establishing and Investigating Occupational Diseases. Medical and social expertise for occupational diseases, rehabilitation program for the victim	-	6	-	1-7	1. Patient interviewing. 2. Physical examination of the patient. 3. Assessment of the sanitary and hygienic characteristics of the	Performance at the patient's bedside, solving situational tasks	Survey, testing

						workplace and the class of working conditions of the patient		
2.	Occupational diseases of the respiratory system	-	6	-	1-7	1. Patient interviewing. 2. Physical examination of the patient. 3. Assessment of the sanitary and hygienic characteristics of the workplace and the class of working conditions of the patient 4. Interpretation of radiographs. 5. Interpretation of spiromograms	Performance at the patient's bedside, solving situational problems*	Survey, testing
3.	Occupational diseases caused by exposure to physical factors: vibration disease and sensorineural hearing loss	-	6	-	1-7	1. Patient interviewing. 2. Physical examination of the patient. 3. Assessment of the sanitary and hygienic characteristics of the workplace and the class of working conditions of the patient	Execution at the patient's bedside, solving situational problems*	Survey, testing
4.	Occupational diseases caused by exposure to chemical factors: occupational intoxication with aromatic hydrocarbons and lead	-	6	-	1-7	1. Patient interviewing. 2. Physical examination of the patient. 3. Interpretation of the hemogram. 4. Interpretation of biochemical analysis of daily urine. 5. Interpretation of a	Performance at the patient's bedside, solving situational tasks	Survey, testing, test*

						biochemical blood test. 6. Preparation of medical documentation	Protection of the educational medical record of an inpatient patient*	
	<b>Total hours in the academic discipline</b>	<b>6</b>	<b>24</b>	<b>3</b>				Examination

\*This is a mandatory form of current certification

## INFORMATION AND INSTRUCTIONAL UNIT

### LITERATURE

#### **Basic (relevant):**

1. Occupational diseases: manual for students of the medical faculty for international students (English medium of instruction) / O. N. Mogilevets, E. V. Mogilevets. – Grodno : GrSMU, 2024. – 83 p.

#### **Additional:**

2. Occupational diseases : explanatory test / A. M. Litvyakov. – Vitebsk : VSMU, 2019. – 140 p.

3. Occupational diseases : textbook / V. A. Kapustnik [etc.]; ed. by V. A. Kapustnik, I. F. Kostyuk. – 2 ed. – Kyiv : AUS Medicine Publishing, 2018. – 495 p.

4. Occupational health and safety for healthcare workers / O. P. Yavorovsky [и др.]. – Kyiv : AUS Medicine Publishing, 2015. – 118 p.

5. Coh, D. Textbook of Occupational Medicine Practice / D. Koh, K. Takahashi. – 4 ed. – World Scientific Publishing Co Pte Ltd, 2018. – 956 p.

#### **Normative regulatory acts:**

6. On the list of occupational diseases : Decree of the Ministry of Health of the Republic of Belarus, the Ministry of Labor and Social Protection of the Republic of Belarus dated 26.12.2022 No 125/92.

**Electronic courseware for the educational discipline «Occupational diseases»**

7. <https://etest.bsmu.by/course/view.php?id=793>

### **METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE**

The time allocated for independent work can be used by students to:

- prepare for lectures, practical classes;
- prepare for an exam in an academic discipline;
- solve situational problems;
- prepare presentations;
- testing.

### **METHODOLOGICAL RECOMMENDATIONS FOR THE ORGANIZATION AND PERFORMANCE OF SUPERVISED STUDENT INDEPENDENT WORK IN THE ACADEMIC DISCIPLINE**

#### **APPROXIMATE LIST OF TASKS FOR SUPERVISED STUDENT INDEPENDENT WORK:**

- taking notes from primary sources (collections of documents, monographs, educational publications, etc.);
- compiling tests for organizing mutual control.

#### **FORMS OF CONTROL OF SUPERVISED STUDENT INDEPENDENT WORK:**

- survey;
- testing.

**LIST OF AVAILABLE DIAGNOSTIC TOOLS**

The following forms of current certification are used to diagnose competencies:  
 testing;  
 survey;  
 control work;  
 solving situational problems  
 protection of the educational medical record of an inpatient.

**LIST OF AVAILABLE TEACHING METHODS**

Linear (traditional) method (practical exercises);

Active (interactive) methods:

Case-Based Learning (CBL);

Problem-Based Learning (PBL);

training based on simulation technologies.

**LIST OF PRACTICAL SKILLS**


Name of the practical skill	Form of practical skill control
1. Patient interviewing	Performance at the patient's bedside
2. Physical examination of the patient	Performance at the patient's bedside
3. Assessment of the sanitary and hygienic characteristics of the workplace and the class of working conditions of the patient	Performance at the patient's bedside, solving situational problems
4. Preparation of medical documentation	Registration of an educational medical record of an inpatient
5. Interpretation of radiographs	Execution at the patient's bedside, solving situational problems
6. Interpretation of spirograms	Solving situational problems
7. Interpretation of the hemogram	Solving situational problems
8. Interpretation of the biochemical analysis of daily urine	Solving situational problems
9. Interpretation of a biochemical blood test	Solving situational problems

**PROTOCOL OF THE CURRICULUM APPROVAL  
BY OTHER DEPARTMENT**

Title of the discipline requiring approval	Department	Amendments to the curriculum in the academic discipline	Decision of the department, which designed the curriculum (date, protocol # )
1. Internal diseases	Internal Medicine, Gastroenterology, Nutrition with a with a course for advanced training and retraining	No	protocol # 13 of 30.04.2025
2. Clinical Immunology, Allergology	Propaedeutics of Internal Diseases	No	protocol # 13 of 30.04.2025

## COMPILERS:

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 S.E.Alekseychik

Curriculum content, composition and the accompanying documents comply with the established requirements.

Head of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

 I.L.Kotovich

Methodologist of the Educational and Methodological Department of the Office of Educational Activities of the Educational Institution «Belarusian State Medical University»

 S.V.Zaturanova