Ministry of Science and Higher Education of the Russian Federation
Ministry of Education and Science of the Kyrgyz Republic

Interstate Educational Organization of Higher Education
Kyrgyz-Russian Slavic University named after the first President of the Russian Federation B.N. Yeltsin

FUND OF ASSESSMENT TOOLS (FAT) for the discipline "OCCUPATIONAL DISEASES "

Level of Higher Education: SPECIALIST

Field of Study:
Code: 31.05.01 – RF, 560001 – KR
Name: General Medicine (for international students)
Qualification: Physician
Total workload: 2 credit units (72 hours)
Course, semesters: 4th year, 8th semester
Year of commencement of training: 2026
Duration of education: 6 years

The Fund of Assessment Tools is designed to control students' knowledge in the field of study (specialty) PHYSICIAN in the discipline "**OCCUPATIONAL DISEASES**"

The Fund of Assessment Tools was reviewed and approved at the meeting of the department of **Family medicine & Therapy**
Protocol No. 1 dated 29.08.2026

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1. LIST OF COMPETENCIES WITH INDICATION OF STAGES OF THEIR FORMATION IN THE PROCESS OF MASTERING THE DISCIPLINE

1.1. GENERAL PROFESSIONAL COMPETENCIES (GPC)

GPC-5: Able to assess morphofunctional, physiological states and pathological processes in the human body

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Basic morphofunctional, physiological states and pathological processes in the human body	Reveal the meaning of basic morphofunctional, physiological states and pathological processes in the human body	Skills in determining basic morphofunctional, physiological states and pathological processes in the human body	Block A: Tests on knowledge of etiology and pathogenesis
Level 2	Specifics of basic morphofunctional, physiological states, pathological processes of the human body in comparison	Note the practical value of specific morphofunctional, physiological processes and pathological states of the human body	Techniques of searching and comparing various morphofunctional, physiological states and pathological processes of the human body	Block A: Tests on knowledge of etiology and pathogenesis

Level 3	Basic pathways of differentiation and drawing conclusions based on assessment of morphofunctional, physiological processes and pathological states of the patient	—	Skills in assessing, differentiating basic morphofunctional, physiological and pathological states of the human body and own justification	Block B: Situational tasks on developing a treatment plan; Block C: Practiceoriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

GPC-7: Able to prescribe treatment and monitor its effectiveness and safety

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Etiology, pathogenesis, clinical picture of basic diseases with various nosological forms, methods of management and treatment of patients in outpatient settings and day hospital conditions	Compare different types and methods of treatment of patients with various nosological forms, develop a treatment plan for diseases	Skills in analyzing different types of treatment of patients with various nosological forms	Block A: Tests on knowledge of etiology and pathogenesis

Level 2	—	Manage and treat patients in outpatient settings and day hospital conditions	Skills in managing and treating patients with various diseases in outpatient settings and day hospital conditions	Block A: Tests on knowledge of etiology and pathogenesis
Level 3	—	Monitor the effectiveness and safety of prescribed treatment at all stages of its implementation	—	Block B: Situational tasks on developing a treatment plan; Block C: Practice-oriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

1.2. PROFESSIONAL COMPETENCIES (PC)

PC-4: Ready to collect and analyze patient complaints, anamnesis data, results of examination, laboratory, instrumental, pathological and other studies

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**

Level 1	Methods and means of collecting and analyzing patient complaints, his anamnesis data, indications and contraindications for additional clinical and paraclinical research methods	Collect and analyze patient complaints, his anamnesis data	Skills in collecting and analyzing patient complaints, his anamnesis data, interpreting results of the most common functional diagnostic methods used to detect pathology of blood, heart and vessels, lungs, kidneys, liver and other organs and systems	Block A: Tests on knowledge of etiology and pathogenesis
Level 2	Necessity of conducting collection and analysis of patient complaints, his anamnesis data	Prescribe laboratory, instrumental, pathological and other studies to recognize the condition or establish the fact of presence or absence of disease	Skills in filling out medical history, skills in prescribing necessary laboratory and instrumental examination methods to recognize the condition or establish the fact of presence or absence of disease	Block A: Tests on knowledge of etiology and pathogenesis
Level 3	Etiopathogenesis, clinical picture and diagnosis of basic diseases	Conduct questioning, collect complaints and anamnesis from the patient	Skills in examining patients, conducting necessary diagnostic measures	Block B: Situational tasks on developing a treatment plan
Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**

Level 4	Indications and contraindications for choosing additional clinical and paraclinical research methods	Compile a pedigree model for families with hereditary diseases	Skills in formulating clinical diagnosis	Block C: Practiceoriented tasks — simulation scenarios of patient management
Level 5	—	Conduct clinical status research	—	Block D: Certification questions on comprehensive patient management
Level 6	—	Determine indications and contraindications for choosing additional clinical and paraclinical research methods	—	Block D: Certification questions on comprehensive patient management

PC-5: Able to determine in patients basic pathological conditions, symptoms, syndromes of diseases, nosological forms in accordance with ICD-10

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**

Level 1	Methods and means of collecting and analyzing patient complaints, his anamnesis data, indications and contraindications for additional clinical and paraclinical research methods	Collect and analyze patient complaints, his anamnesis data	Skills in collecting and analyzing patient complaints, his anamnesis data, interpreting results of the most common functional diagnostic methods used to detect pathology of blood, heart and vessels, lungs, kidneys, liver and other	Block A: Tests on knowledge of etiology and pathogenesis
Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
			organs and systems	
Level 2	Necessity of conducting collection and analysis of patient complaints, his anamnesis data	Prescribe laboratory, instrumental, pathological and other studies to recognize the condition or establish the fact of presence or absence of disease	Skills in filling out medical history, skills in prescribing necessary laboratory and instrumental examination methods to recognize the condition or establish the fact of presence or absence of disease	Block A: Tests on knowledge of etiology and pathogenesis

Level 3	Etiopathogenesis, clinical picture and diagnosis of basic diseases	Conduct questioning, collect complaints and anamnesis from the patient; compile a pedigree model for families with hereditary diseases	Skills in examining patients, conducting necessary diagnostic measures	Block B: Situational tasks on developing a treatment plan
Level 4	Indications and contraindications for choosing additional clinical and paraclinical research methods	Conduct clinical status research; determine indications and contraindications for choosing additional clinical and paraclinical research methods	Skills in formulating clinical diagnosis	Block C: Practiceoriented tasks — simulation scenarios of patient management
Level 5	Indications and contraindications for additional clinical and paraclinical research methods	Use methods and means of medical examination, diagnostic measures	—	Block D: Certification questions on comprehensive patient management

PC-7: Able to determine tactics for managing patients with various nosological forms

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Etiology, pathogenesis, clinical picture of diseases	Reveal the meaning of determining tactics for managing patients with various diseases	Skills in presenting and analyzing etiology, pathogenesis of various clinical diseases for diagnosis	Block A: Tests on knowledge of etiology and pathogenesis

Level 2	Basic types and methods of treating patients with various nosological forms; basic directions and problems in managing patients with various diseases	Compare different types and methods of treating patients with various nosological forms, develop a treatment plan for diseases	Techniques of searching and comparing different methods of treating patients with various nosological forms	Block A: Tests on knowledge of etiology and pathogenesis
Level 3	—	Note the practical value of individual tactics for managing patients with various nosological forms	Skills in determining tactics for managing patients with diseases	Block B: Situational tasks on developing a treatment plan; Block C: Practice-oriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

PC-8: Ready to manage and treat patients with various nosological forms in outpatient settings and day hospital conditions

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Etiology, pathogenesis, clinical picture of basic diseases with various nosological forms	Correctly identify the given disease	Skills in analyzing different types of treatment of patients with various	Block A: Tests on knowledge of etiology and pathogenesis
Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
			nosological forms	

Level 2	Basic types and methods of treating patients with various nosological forms	Compare different types and methods of treating patients with various nosological forms, develop a treatment plan for diseases	Techniques of searching and comparing different methods of treating patients with various nosological forms	Block A: Tests on knowledge of etiology and pathogenesis
Level 3	Methods of managing and treating patients with various nosological forms in outpatient settings and day hospital conditions	Manage and treat patients in outpatient settings and day hospital conditions	Skills in managing and treating patients with various diseases in outpatient settings and day hospital conditions	Block B: Situational tasks on developing a treatment plan; Block C: Practice-oriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

PC-9: Ready to provide primary health care in case of sudden acute diseases, conditions, exacerbation of chronic diseases

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Clinical manifestations of acute and chronic diseases	Link symptoms, examination data and laboratory and instrumental examination indicators into a single whole and make a correct diagnosis	Skills in identifying signs of acute disease or exacerbation of chronic disease	Block A: Tests on knowledge of etiology and pathogenesis
Level 2	Treatment techniques and performance of medical manipulations in pathological	Prepare the patient, instruments and medications for the necessary manipulation	Skills in etiological and pathogenetic therapy in treating diseases	Block A: Tests on knowledge of etiology and pathogenesis

Stage	Know	Able to	Master	Types of Assessment Tools
	conditions and diseases		depending on the severity of the disease in outpatient settings	
Level 3	General principles of disease treatment considering their etiology and pathogenesis; knowledge of pharmacological groups and their interaction with each other	Assess the stage of disease and prescribe therapy corresponding to the stage of disease	Skills and methods of providing medical care in acute and chronic diseases	Block B: Situational tasks on developing a treatment plan; Block C: Practiceoriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

PC-14: Able to maintain medical documentation

Stage	Know	Able to	Master	Types of Assessment Tools
Level 1	List and characteristics of medical records in medical organizations of therapeutic profile	—	—	Block A: Tests on knowledge of etiology and pathogenesis

Level 2	Regulatory documentation adopted in healthcare, as well as documentation for assessing quality and effectiveness of medical organizations	Conduct medical statistical analysis of health indicators of the attached population; maintain medical documentation, including in electronic form	Skills in working with and methods of maintaining records and reporting documentation of various types in medical institutions; skills in comparative characterization of medical documentation of various types in medical institutions	Block A: Tests on knowledge of etiology and pathogenesis; Block B: Situational tasks on developing a treatment plan; Block C: Practiceoriented tasks — simulation scenarios of patient management; Block D: Certification questions on
Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
				comprehensive patient management

3. RESULTS OF MASTERING THE DISCIPLINE

Stage	**Know**	**Able to**	**Master**	**Types of Assessment Tools**
Level 1	Basic morphofunctional, physiological states and pathological processes in the human body; etiology, pathogenesis, clinical picture of basic diseases; methods and means of collecting and analyzing patient complaints	Reveal the meaning of basic concepts; collect and analyze complaints and anamnesis; compare different types of treatment	Skills in determining basic states and processes; skills in collecting and analyzing complaints; skills in analyzing types of treatment	Block A: Tests on knowledge of etiology and pathogenesis

Level 2	Specifics of processes in comparison; necessity of conducting collection and analysis of data; basic types and methods of treatment	Note practical value; prescribe laboratory and instrumental studies; compare treatment methods, develop a treatment plan	Techniques of searching and comparing; skills in documentation; skills in prescribing examinations	Block A: Tests on knowledge of etiology and pathogenesis
Level 3	Pathways of differentiation and drawing conclusions; etiopathogenesis and diagnosis of diseases; methods of managing patients in outpatient settings	Conduct questioning and collection of anamnesis; compile pedigree model; conduct clinical status research; manage and treat patients; monitor effectiveness	Skills in assessing and differentiating states; skills in examination and diagnosis; skills in formulating clinical diagnosis; skills in managing and treating patients	Block B: Situational tasks on developing a treatment plan; Block C: Practiceoriented tasks — simulation scenarios of patient management; Block D: Certification questions on comprehensive patient management

4. STRUCTURE OF ASSESSMENT TOOLS BLOCKS

Block	**Content**	**Competencies**	**Week**
Block A	Tests on knowledge of etiology and pathogenesis: pneumoconioses (silicosis, anthracosilicosis, asbestosis, welders' pneumoconiosis); dust bronchitis; occupational bronchial asthma; vibration disease; occupational intoxications with pesticides, mercury, lead, benzene; pathogenesis of pneumoconioses and vibration disease; criteria of etiological diagnosis; differential diagnosis (asbestosis, lead intoxication, vibration disease)	GPC-5 (L1–L2), GPC-7 (L1–L2), PC-4 (L1–L2), PC-5 (L1–L2), PC-7 (L1–L2), PC-8 (L1–L2), PC-9 (L1–L2), PC-14 (L1–L2)	1–2, 5, 7–8

Block B	Situational tasks: management of patients with pneumoconioses; organization of preliminary and periodic medical examinations; examination of working capacity and dispensary observation; principles of medical and labor expertise (MLE) in occupational diseases; diagnosis and treatment of vibration disease; emergency care in acute occupational intoxications; development of treatment plan considering disease course	GPC-5 (L3), GPC-7 (L3), PC-4 (L3), PC-5 (L3), PC-7 (L3), PC-8 (L3), PC-9 (L3), PC-14 (L2–L3)	3–4, 5, 7–8
Block C	Practice-oriented tasks — simulation scenarios: writing a training medical history with occupational anamnesis; filling out the MLE examination act; sanitary and hygienic characterization of the workplace; clinical examination in vibration disease (Auburn, Thomsen, Welsh, Elkin, Finkelstein symptoms); diagnosis of occupational diseases of the upper extremities; emergency care in intoxications	GPC-5 (L3), GPC-7 (L2–L3), PC-4 (L4), PC-5 (L3), PC-7 (L3), PC-8 (L3), PC-9 (L3), PC-14 (L2–L3)	5–8
Block D	Certification questions on comprehensive management: dispensary observation of patients with pneumoconioses; prevention of occupational diseases (technical, organizational, medical measures); medical and labor rehabilitation; selection of rational types of work; influence of new factors of production environment; occupational diseases from ionizing radiation; deontology of the physician in management of occupational patients	GPC-5 (L3), GPC-7 (L3), PC-4 (L5–L6), PC-5 (L3), PC-7 (L3), PC-8 (L3), PC-9 (L3), PC-14 (L3)	8

5. DISTRIBUTION BY SEMESTERS

Semester	Type of Control	Used Blocks	Competencies
8	Current control (testing by sections, oral questioning)	Block A	GPC-5 (L1), GPC-7 (L1), PC-4 (L1), PC-5 (L1), PC-7 (L1), PC-8 (L1), PC-9 (L1), PC-14 (L1)

8	Intermediate control No. 1 on the section "Subject of occupational pathology. Dust diseases" (week 5, topics 1.1–1.5)	Block A, Block B (partially)	GPC-5 (L1–L2), GPC-7 (L1–L2), PC-4 (L1–L3), PC-5 (L1–L2), PC-7 (L1–L2), PC-8 (L1–L2), PC-9 (L1–L2), PC-14 (L1–L2)
8	Intermediate control No. 2 on the section "Occupational diseases from physical factors. Occupational diseases from toxic-chemical factors" (week 8, topics 2.1–2.5)	Block A, Block B	GPC-5 (L1–L3), GPC-7 (L1–L3), PC-4 (L1–L3), PC-5 (L1–L3), PC-7 (L1–L3), PC-8 (L1–L3), PC-9 (L1–L3), PC-14 (L1–L3)
8	Final certification (differentiated pass/exam)	Block A (final), Block B, Block C, Block D	GPC-5 (L1–L3), GPC-7 (L1–L3), PC-4 (L1–L6), PC-5 (L1–L3), PC-7 (L1–L3), PC-8 (L1–L3), PC-9 (L1–L3), PC-14 (L1–L3)

CALENDAR SCHEDULE WITH ASSESSMENT TOOLS

Week	**Topic**	**Type of Class**	**Assessment Tool**
1	Introduction to the clinic of occupational diseases. Dust diseases of the lungs	Lecture, practical	Block A (tests)
2	Pneumoconioses (silicosis, anthracosis, asbestosis). Occupational bronchitis, asthma	Lecture, practical	Block A (tests)
3	Vibration disease. Occupational diseases of the musculoskeletal system	Practical	Block B (situational tasks)
4	Intoxications with pesticides, mercury, lead, benzene. Emergency care	Practical	Block B (situational tasks)
Week	**Topic**	**Type of Class**	**Assessment Tool**

5	Intermediate control No. 1 + Pathogenesis of pneumoconioses. Etiological diagnosis	Practical, SRS	Block A, Block B (intermediate), Block C
6	Medical history. Differential diagnosis of lead intoxication. Vibration disease	Practical, SRS	Block C (simulations, medical history)
7	Occupational diseases of the upper extremities. Radiation disease. Preparation for certification	Practical, SRS	Block A, Block B (review)
8	Intermediate control No. 2 + Final certification	Practical, pass/exam	Block A (final)

6. TECHNOLOGICAL MAP OF THE DISCIPLINE

Module	Name	Control	Form of Control	Min	Max	Week
Module 1	IC No. 1: Subject of occupational pathology. Dust diseases	Current	Frontal questioning, testing (Block A), practical skills (collection of occupational anamnesis), attendance, SRS	2	4	1–2
		Intermediate	Oral/written questioning, situational task (diagnosis of pneumoconiosis), practical skills (sanitary and hygienic characterization)	6	10	5
Module 2	IC No. 2: Occupational diseases from physical and chemical factors	Current	Frontal questioning, testing (Block A), practical skills (examination in vibration disease, neurological status), attendance, SRS	2	4	3–4

		Intermediate	Oral/written questioning, situational task	6	10	8
Module	**Name**	**Control**	**Form of Control**	**Min**	**Max**	**Week**
			(emergency care in intoxication), practical skills (filling out MLE)			
	TOTAL for semester			**40**	**70**	
	Intermediate control (Pass)			**12**	**20**	8
	Semester rating					

7. TYPICAL CONTROL TASKS BLOCK A: Reproductive Level (Knowledge) — Duration: 30 minutes 1. Oral Questions

Question 1. List the main clinical forms of silicosis and their radiological characteristics. (GPC5, L1; PC-5, L1)

Question 2. Characterize the etiological factors of occupational bronchial asthma. (GPC-5, L1; PC-4, L1)

Question 3. Name the diagnostic criteria for vibration disease according to ICD-10. (PC-5, L2)

Question 4. List the main routes of lead entry into the body and mechanisms of its toxic action. (GPC-5, L2)

Question 5. Describe the principles of conducting preliminary and periodic medical examinations of workers. (PC-14, L1)

2. Test Tasks (Closed Type)

Task 1. The most characteristic radiological sign of stage I silicosis is:

- a) enhancement of pulmonary pattern
- b) small focal (1–5 mm) intense shadows with clear contours
- c) large focal shadows
- d) pneumosclerosis

Correct answer: b) small focal (1–5 mm) intense shadows with clear contours (GPC-5, L1)

Task 2. In chronic mercury intoxication, the following is primarily affected:

- a) liver
- b) kidneys
- c) central nervous system
- d) cardiovascular system

Correct answer: c) central nervous system (GPC-5, L2)

Task 3. To diagnose an occupational disease, it is necessary to establish:

- a) only clinical manifestations
- b) connection of the disease with occupation

- c) only data from instrumental methods
- d) only laboratory changes

Correct answer: b) connection of the disease with occupation (PC-4, L2; PC-5, L2)

Task 4. Thomsen's symptom is characteristic of:

- a) silicosis
- b) vibration disease
- c) lead intoxication
- d) asbestosis

Correct answer: b) vibration disease (PC-5, L3)

Task 5. The main document confirming an occupational disease is:

- a) outpatient card
- b) MLE examination act
- c) medical history with detailed occupational anamnesis
- d) sanitary and hygienic characteristic

Correct answer: c) medical history with detailed occupational anamnesis (PC-14, L2)

BLOCK B: Reconstructive Level (Application) — Duration: 60 minutes Situational Tasks Task 1 (PC-4, L3; PC-5, L3; PC-7, L2)

Situation: A mine worker with 15 years of work experience sought medical attention with complaints of cough with sputum, shortness of breath during physical exertion, periodic chest pain. Upon examination: radiologically revealed small focal shadows in the upper lobes of the lungs, FEV1 reduced to 65%, silicon particles found in sputum.

Questions:

1. Make a preliminary diagnosis and justify it. (5 points)
2. Prescribe additional examination methods to confirm the diagnosis. (5 points)
3. Develop a treatment and rehabilitation plan for the patient with justification of the choice of methods. (10 points) **Evaluation Criteria:**

- Correct identification of pneumoconiosis syndrome and its differentiation (silicosisanthracosilicosis) — 5 points
- Prescription of additional examination methods (CT, bronchoscopy with biopsy, functional tests, consultation with phthisiologist) — 5 points
- Justification of the choice of treatment methods considering the stage of the disease, mechanisms of development and prevention of progression — 10 points

Task 2 (PC-4, L4; PC-9, L3; GPC-7, L3)

Situation: A worker at a chemical plant (contact with benzene) for 10 years, during the shift felt dizziness, nausea, weakness appeared, skin and mucous membranes acquired a yellowish tint. Upon examination: BP 90/60 mmHg, pulse 110/min, abdomen soft, tenderness in the right hypochondrium, liver enlarged by 3 cm.

Questions:

1. What emergency condition do you suspect? Justify. (5 points)
2. Describe the algorithm for providing emergency care. (10 points)
3. Prescribe necessary examination and justify it. (5 points) **Evaluation Criteria:**

- Correct determination of acute hemolytic crisis in chronic benzene intoxication — 5 points
- Algorithm of emergency care: cessation of contact, gastric lavage, infusion therapy, blood transfusion, consultation with hematologist — 10 points
- Prescription of general blood test with reticulocytes, biochemistry (bilirubin, LDH), coagulogram, liver ultrasound — 5 points

Business Games — Duration: 60 minutes Game 1: "Physician-Expert of MLE" — 20 points (PC-14, L3; PC-4, L6)

Roles: occupational pathologist physician, chairman of MLE, employer representative, patient (mine worker with stage II silicosis).

Task: Conduct an MLE meeting, determine the degree of loss of professional working capacity, give recommendations for employment.

Evaluation Criteria:

- Correct filling out of the examination act — 5 points
- Justification of the degree of loss of working capacity considering the stage of the disease, functional disorders, working conditions — 10 points
- Recommendations for rational employment (transfer to less harmful work, disability) — 5 points

Game 2: "Sanitary and Hygienic Expertise" — 20 points (PC-4, L3; GPC-5, L3)

Roles: occupational pathologist physician, labor conditions inspector, plant representative, worker.

Task: Conduct an assessment of working conditions at the workplace (metal grinder), identify harmful production factors, give a conclusion on professional fitness.

Evaluation Criteria:

- Identification of harmful factors (vibration, dust, noise) — 5 points
- Assessment of the degree of harmfulness based on workplace certification results — 5 points
- Conclusion on professional fitness with justification — 10 points

Game 3: "Emergency Care in Occupational Poisoning" — 20 points (PC-9, L3; PC-4, L4)

Roles: occupational pathologist physician, nurse, victim (acute poisoning with mercury vapors), security service representative.

Task: Provide emergency care in acute occupational poisoning, organize transportation.

Evaluation Criteria:

- Algorithm of first aid (cessation of exposure, lavage, antidote therapy) — 10 points
- Correct filling out of urgent notification of occupational disease — 5 points
- Organization of further treatment and observation — 5 points

BLOCK C: Practice-Oriented Level (Skills) — Duration: 40 minutes Practical Task 1: Collection of occupational anamnesis and clinical examination — 20 points (PC-4, L1–L4)

Task: Conduct questioning and examination of a patient with suspected vibration disease.

Evaluation Criteria:

- Correct collection of occupational anamnesis (experience, specialty, specific harmful factors, use of PPE) — 5 points
- Identification of subjective symptoms (numbness, tingling, pain in hands, vasomotor disorders) — 5 points
- Determination of objective symptoms (Auburn, Thomsen, Welsh symptoms, neurological status) — 10 points

Practical Task 2: Filling out medical documentation — 20 points (PC-14, L2–L3)

Task: Fill out the MLE examination act for a patient with stage II silicosis, 20 years of work experience, FEV1 55%, has complaints of shortness of breath, cough.

Evaluation Criteria:

- Correct filling out of passport part and anamnesis — 5 points
- Justification of diagnosis indicating stage and functional disorders — 10 points

- Formulation of conclusion on degree of loss of working capacity and recommendations — 5 points

BLOCK D: Certification Level (Comprehensive Assessment) — Duration: 120 minutes
Certification Questions (Tickets) Ticket No. 1

1. **Theoretical question:** Pneumoconioses: etiology, pathogenesis, classification, clinic, diagnosis, differential diagnosis, treatment, prevention. Organization of dispensary observation. (30 points) (GPC-5, L1–L3; PC-5, L1–L3; PC-7, L1–L3)
2. **Practical skill:** Clinical examination of a patient with vibration disease: determination of autonomic-vascular and neurosensory pathology, identification of characteristic symptoms (Auburn, Thomsen, Welsh, Elkin, Finkelstein). Documentation of examination results. (40 points) (PC-4, L3–L4; PC-5, L3)
3. **Analytical task:** Interpretation of examination results of a contact shop worker (lead): clinical manifestations, laboratory data (blood lead level, coproporphyrin in urine, basophilic granularity of erythrocytes), diagnosis, development of treatment and rehabilitation plan, decision on working capacity. (30 points) (PC-4, L3–L6; PC-7, L3; PC-8, L3; GPC-7, L3) **Ticket No. 2**

1. **Theoretical question:** Occupational intoxications with metals (mercury, lead, manganese): etiology, mechanisms of action, clinical forms, diagnosis, treatment principles, prevention. (30 points) (GPC-5, L1–L3; PC-5, L1–L3)
2. **Practical skill:** Emergency care in acute intoxication (simulated patient with acute poisoning with mercury vapors): algorithm of actions, antidote therapy, filling out urgent notification. (40 points) (PC-9, L3; PC-4, L4)
3. **Analytical task:** Sanitary and hygienic characterization of a metal grinder's workplace: identification of harmful factors, assessment of risk of developing occupational pathology, development of prevention measures, conclusion on professional fitness. (30 points) (PC-4, L3; PC-14, L3; GPC-5, L3)

Ticket No. 3

1. **Theoretical question:** Occupational diseases from physical factors (vibration, noise): pathogenesis, clinic, diagnosis, differential diagnosis, treatment, examination of working capacity. (30 points) (GPC-5, L1–L3; PC-5, L1–L3; PC-7, L1–L3)
2. **Practical skill:** Conducting preliminary medical examination of a worker entering work with harmful working conditions: examination algorithm, determination of professional fitness, documentation. (40 points) (PC-4, L1–L2; PC-14, L2)
3. **Analytical task:** Comprehensive management of a patient with chronic mercury intoxication: clinical manifestations, diagnosis, differential diagnosis with neuroses and multiple sclerosis, treatment, rehabilitation, examination of working capacity. (30 points) (PC-4, L3–L6; PC-5, L3; PC-7, L3; PC-8, L3)

ASSESSMENT SCALE

Level	Points	Grade
Excellent	90–100	5 (excellent)
Good	75–89	4 (good)
Satisfactory	60–74	3 (satisfactory)

Unsatisfactory	< 60	2 (unsatisfactory)

PRACTICAL SKILLS FOR CERTIFICATION

Note: This section contains a list of specific practical skills assessed within Block D (certification level) and intermediate certification. Skills are assessed separately or as part of a comprehensive ticket.

No.	Skill	Competency	Block	Time (min)
1	Collection of complaints and anamnesis (general and occupational) considering harmful factors of production environment	PC-4 (L1, L3)	D	15
2	Compilation of detailed occupational anamnesis: work experience, specialty, specific harmful factors, use of PPE, household harmful factors	PC-4 (L3)	D	15
3	Sanitary and hygienic characterization of workplace (by description or at production)	PC-14 (L3), GPC5 (L3)	D	20
4	Clinical examination of patient with pneumoconiosis: determination of breathing character, percussion and auscultation of lungs, assessment of external respiratory function	PC-4 (L4), PC-5 (L3)	D	20
5	Neurological examination in vibration disease: identification of sensory disorders, Auburn, Thomsen, Welsh, Elkin, Finkelstein symptoms	PC-4 (L4), PC-5 (L3)	D	25
6	Determination of autonomic-vascular disorders (vascular samples, assessment of skin sensitivity, perspiration)	PC-4 (L4), GPC-5 (L3)	D	15
7	Interpretation of radiological changes in pneumoconioses (determination of stage, differentiation of types)	PC-5 (L2–L3), GPC-5 (L2)	D	20

8	Interpretation of spirometry and pneumotachometry (determination of external respiratory function disorders)	PC-4 (L2), GPC-5 (L3)	D	15
9	Prescription of laboratory examination methods in occupational intoxications (determination of lead, mercury, benzene, their metabolites) with justification	PC-4 (L2, L6), GPC-7 (L1)	D	15
10	Interpretation of laboratory research results in chronic intoxication (blood lead level, coproporphyrin, basophilic granularity, mercury in urine)	PC-4 (L2), PC-5 (L3)	D	15
11	Diagnosis of occupational disease with formulation of etiological and nosological units according to ICD-10	PC-4 (L4), PC-5 (L3)	D	15
12	Development of treatment plan for patient with pneumoconiosis considering stage, functional disorders, comorbid pathology	GPC-7 (L1–L3), PC-7 (L2–L3), PC-8 (L3)	D	20
13	Determination of indications for hospitalization, outpatient or inpatient treatment in occupational diseases	GPC-7 (L2), PC-8 (L3)	D	10
14	Emergency care in acute occupational poisoning (algorithm of actions, gastric lavage, antidote therapy, symptomatic treatment)	PC-9 (L3), GPC-7 (L3)	D	20
15	Filling out urgent notification of occupational disease and acute occupational poisoning	PC-14 (L3)	D	15
16	Documentation of medical history with detailed occupational anamnesis and justification of diagnosis	PC-4 (L4), PC-14 (L2)	D	25

17	Filling out MLE examination act (formulation of diagnosis, degree of loss of working capacity, recommendations for employment)	PC-4 (L6), PC-14 (L3)	D	25
18	Determination of degree of loss of professional working capacity in pneumoconioses and vibration disease considering stage, functional disorders, working conditions	PC-4 (L6), PC-14 (L3)	D	20
19	Selection of rational types of work for occupational patients with limited working capacity	PC-4 (L6), PC-14 (L3)	D	15
20	Conducting preliminary medical examination when entering work with harmful working conditions	PC-4 (L1), PC-14 (L2)	D	20
No.	**Skill**	**Competency**	**Block**	**Time (min)**
21	Conducting periodic medical examination of contact shop worker (lead, mercury, benzene)	PC-4 (L1–L2), PC-14 (L2)	D	25
22	Development of recommendations for prevention of occupational diseases at specific workplace (technical, organizational, medical measures)	PC-7 (L3), GPC-7 (L3)	D	20
23	Assessment of effectiveness of conducted treatment and rehabilitation of patient with occupational pathology	GPC-7 (L3), PC-8 (L3)	D	15
24	Counseling of patient on issues of prevention of occupational diseases and use of personal protective equipment	PC-7 (L3), PC-8 (L3)	D	15

Criteria for evaluation of practical skills:

- Technique of execution — 40%
- Interpretation of results — 30%
- Observance of asepsis and antisepsis — 15%
- Communication with patient (ethics, tact) — 15%

8. METHODOLOGICAL MATERIALS FOR ASSESSMENT

8.1. 100-Point Assessment Scale

Activity Type	Pass Minimum	Pass Maximum	% of Final Grade	Note
Current control (Module 1 + Module 2)	4	8	20%	Frontal questioning, testing, practical skills, attendance, SRS
Intermediate control (Module 1 + Module 2)	12	20	50%	Oral/written questioning, situational tasks, practical skills
Total for semester	**16**	**28**	**70%**	Sum of current and intermediate control for 2 modules
Intermediate control (Pass)	**12**	**20**	**30%**	Final grade for the discipline
Semester rating for the discipline			**100%**	Cumulative assessment of all types of control

8.2. Criteria for Assessment by Levels of Mastery

Level	Characteristic	Points	Grade	Types of Assessment Tools
Reproductive	Reproduction of facts, definitions, algorithms without errors	60-69	Satisfactory (E)	Block A: Tests on knowledge of etiology and pathogenesis
Reconstructive	Application of knowledge in standard situations, solution of typical tasks	70-84	Good (C, D)	Block B: Situational tasks on developing a treatment plan

Practiceoriented	Solution of professional tasks, mastery of practical skills	85-94	Excellent (B)	Block C: Practiceoriented tasks — simulation scenarios of patient management in polyclinic
Creative	Comprehensive analysis of nonstandard situations, making justified decisions	95-100	Excellent (A)	Block D: Certification questions on comprehensive patient management; analytical tasks on assessment of therapy effectiveness

8.3. Criteria for Assessment of Practical Skills (Detail)
Comprehensive patient examination (maximum 40 points):

Criterion	**Excellent (36-40)**	**Good (28-35)**	**Satisfactory (20-27)**	**Unsatisfactory (0-19)**
Technique of anamnesis collection	Complete, structured anamnesis without omissions, correct questions	Complete anamnesis, minor inaccuracies in formulations	Main sections of anamnesis collected, requires leading questions	Incomplete anamnesis, incorrect questions
Technique of physical examination	Ideal technique, observance of sequence	Minor violations of technique	Makes errors in technique, requires correction	Gross errors in technique
Data interpretation	Correct, with identification of pathology	Correct, minor inaccuracies	Partially correct, details missed	Erroneous interpretation
Criterion	**Excellent (36-40)**	**Good (28-35)**	**Satisfactory (20-27)**	**Unsatisfactory (0-19)**
Documentation	Literate, according to standard	Minor violations of documentation	Requires corrections	Does not correspond to standard

Procedure for Retake and Appeal

1. **Retake of intermediate control:** Within 2 weeks after the main date at specially allotted time. Maximum score upon retake — 80% of maximum.
2. **Retake of pass:** Within established retake periods. Grade not higher than "satisfactory."
3. **Retake of exam:** In accordance with the examination session schedule.

CRITERIA FOR ASSESSMENT OF PRACTICAL SKILLS

Level of Execution	Grade	Criteria
High	5 (excellent)	Skill performed completely, correctly, within time limit; confident mastery of technique; correct interpretation of results; independent decision-making
Medium	4 (good)	Skill performed correctly but with minor remarks; minor violations of time limit; minimal correction required
Basic	3 (satisfactory)	Skill performed with substantial errors; time limit exceeded; teacher's assistance required; incomplete interpretation of results
Low	2 (unsatisfactory)	Skill not performed or performed with gross errors; methodology violated; interpretation of results impossible

LITERATURE

Main Sources:

1. Bely T.P. Occupational Diseases: Textbook. — M.: MEDpress-inform, 2022. — 480 p.
2. Nagernaya A.P., Donskikh V.A. Occupational Diseases and Toxicology: Textbook. — M.: GEOTAR-Media, 2021. — 544 p.
3. Order of the Ministry of Health of Russia dated 30.06.2021 No. 417n "On approval of the list of occupational diseases."
4. ICD-10: International Statistical Classification of Diseases and Related Health Problems. 10th Revision. — WHO, 2019.

APPENDIX 1.

Medical History (Practical Work on Patient Management) 1. General Provisions

- Medical history — mandatory work of each student for the discipline
- Student independently manages the patient (inpatient: 3–5 days, outpatient: 2–3 visits). • Work includes: collection of anamnesis, examination, formulation of diagnosis, plan of examination and treatment.
- Deadline for submission: no later than 2 weeks before pass/exam.
- **Goal:** to assess the student's skills in data collection, examination, diagnosis and treatment planning.

3. Algorithm of Work Execution

Stage	Action	What to Focus On	Teacher's Control
Stage 1. Preparation (1 day)			
	Obtain referral from department	Schedule of practice, list of patients	Signature in journal
	Familiarize with medical documentation	Medical history, outpatient card, examination results	Permission from head of department
	Study theory on disease profile	Textbooks, clinical guidelines, protocols	Oral questioning
Stage 2. Data Collection (1–2 days)			
	Collection of complaints and anamnesis Appendix 1.1.	Questioning algorithm	Teacher's observation
	General examination	Examination methodology	Correction of technique and presence at examination
	Physical examination	Percussion, auscultation, palpation	Checking correctness of symptom identification
	Analysis of laboratory and instrumental data	Norms and interpretation methods	Control of correctness of interpretation
Stage	**Action**	**What to Focus On**	**Teacher's Control**
Stage 3. Documentation (1–2 days)			

	Filling out title page	Form of medical history of Ministry of Health	Checking requisites
	Writing sections of medical history	Sample of documentation	Checking structure and terminology
	Formulation of preliminary diagnosis	ICD-10, syndromal approach	Checking correspondence to clinical picture
	Development of examination plan	Standards and algorithms	Assessment of justification of prescriptions
	Development of treatment plan	Clinical guidelines	Checking consideration of contraindications
	Keeping observation diaries	Rules of keeping dynamics	Daily control
Stage 4. Defense of Work			
	Preparation of brief report	Structure: complaints → diagnosis → treatment → dynamics	—
	Oral defense	Checklist of questions	Assessment by criteria

Appendix 1.1 Supplement to the section "Life Anamnesis"
Occupational Anamnesis (mandatory when suspecting occupational disease): — Profession, specialty, qualification — Total work experience and by specialty — Specific harmful production factors (chemical, physical, biological, dust, noise, vibration) — Intensity and duration of exposure — Use of personal protective equipment (type, regularity) — Previous places of work with similar harmful conditions — Seasonality of disease (improvement on vacation, worsening upon return to work) — Household harmful factors (for differential diagnosis)
3. Assessment and Verification of Medical History
3.1 Structure of Assessment (100 points)

Section of Medical History	**Points**	**What to Focus on When Assessing**
Title page, header	5	Correctness of full name, date of birth, date of admission, department, history number, code
Complaints	10	Completeness (subjective + objective), chronology, significant negations
Life anamnesis	10	Systematicity: allergic, epidemiological, hereditary, occupational, living conditions, harmful habits (quantity, experience)
Disease anamnesis	15	Logic of presentation: cause, onset, dynamics, treatment before admission
Objective examination	20	Completeness: general condition, skin/mucous membranes, lymph nodes, respiratory organs, cardiovascular system, gastrointestinal tract, urinary system, nervous system; correctness of terminology
Data from instrumental and laboratory methods	10	Correctness of interpretation, connection with clinical picture, comparison with norm
Preliminary diagnosis	15	Formulation according to ICD-10, syndromal decoding, justification of diagnosis
Differential diagnosis	10	Logic, comparative , justification of exclusion of alternatives
Examination plan	10	Justification, consideration of contraindications, economy
Treatment plan	10	Correspondence to standards, consideration of comorbid pathology and contraindications
Observation diaries (≥3)	5	Dynamics of condition, correction of diagnosis and treatment, date and signature
Section of Medical History	**Points**	**What to Focus on When Assessing**
TOTAL	**100**	

3.2 Assessment Criteria by Levels

Level	Points	Characteristics of Work	Teacher's Action
Unsatisfactory	<60	Gross errors in diagnosis or treatment, incomplete management, plagiarism	Return for revision, new management or correction with consultation
Satisfactory (E)	60-69	Main sections completed, there are inaccuracies, formal approach	Accept with indication of shortcomings, recommendations for independent work
Good (C-D)	70-84	Complete structure, correct diagnosis, justified treatment, insufficient depth of analysis	Accept, recommendations for development of clinical thinking
Excellent (B)	85-94	Completeness, correctness, literacy, critical analysis, consideration of patient characteristics	Accept, encouragement, possible recommendation for publication or exhibition
Excellent (A)	95-100	All criteria of B + original observations, independent analysis of complex case	Accept, recommendation for scientific work, conference

3.3 Verification Procedure (Step-by-Step for Teacher)

1. **Acceptance of work (5 min)**
    - Check presence of all sections (11 sections)
    - Check signatures of head of department and supervisor
    - Check management periods (≥3 days in diaries)
2. **Superficial check (10 min)**
    - Check originality (anti-plagiarism)
    - Check documentation (GOST/order of Ministry of Health)
    - Check terminology and correctness of formulations
3. **Deep check (20-30 min)**
    - Complaints: chronology, negations
    - Life anamnesis: harmful habits quantitatively
    - Objective examination: completeness, logic of description
    - Diagnosis: syndromal decoding
    - Treatment plan: specific doses and schemes
    - Diaries: dynamics, correction, signatures
4. **Oral defense (15-20 min)**
    - Check knowledge of material
    - Check clinical thinking

- Check mastery of practical skills (simulator)

5. **Setting final grade (5 min)**
    - Fill out assessment form
    - Teacher's signature
    - Inform student of result and recommendations for improvement

3.4 Actions Upon Low Grade

Situation	**Reason**	**Solution**
<60 points	Gross errors, incomplete management, plagiarism	Consultation, revision with new patient, new topic in case of plagiarism
60-69 points	Formal approach	Indication of shortcomings, recommendations for independent work, pass with remark

APPENDIX 2.

Control and Assessment of Students' Independent Work (SRS) Topics of SRS for the Discipline "Occupational Diseases" Section 1. Subject of Occupational Pathology. Dust Diseases

1. Modern concepts of pathogenesis of pneumoconioses. Organization and conduct of examinations of persons working in conditions of dust exposure.
2. Criteria of etiological diagnosis. Differential diagnosis of asbestosis.
3. Influence of new factors of production environment on health status of workers. Principles of medical and labor expertise (MLE) in occupational diseases.

Section 2. Occupational Diseases from Physical and Toxic-Chemical Factors 4. Etiology, clinic, diagnosis and treatment of chronic mercury intoxication. 5. Differential diagnosis of lead intoxication. Influence of benzene and its homologs on the organism. 6. Modern concepts of pathogenesis of vibration disease. Differential diagnosis. 7. Differential diagnosis of occupational diseases of the upper extremities. 8. Occupational diseases from exposure to ionizing radiation.

1. General Provisions

- Student performs independent work on a topic or section of the course.
- Work may include: information collection, data analysis, preparation of report/essay/abstract and preparation of oral presentation.
- Deadlines are set by the teacher.

2. Criteria for Assessment of Work (100 points)

Criterion	**Points**	**Detail**
Relevance and formulation of goal	10	Clear goal, correspondence to topic, justification of task choice
Content and depth of disclosure	30	Completeness of material, logic of presentation, systematicity
Scientificity and critical analysis	20	Use of sources, comparison of opinions, analytical approach
Practical significance	15	Connection with practice, application of knowledge, justification of decisions
Documentation and style	15	Literacy, structuring, design of references and figures
Defense of work	10	Oral presentation, answers to questions, argumentation

3. Assessment Scale

- 95–100 points — Excellent (A)
- 85–94 points — Excellent (B)
- 70–84 points — Good (C–D)

- 60–69 points — Satisfactory (E)
- <60 points — Unsatisfactory

4. Procedure for Teacher's Verification of Work 1. **Acceptance of work**

- Check presence of all parts of work: title page, contents, main part, list of literature.
- Check deadlines and signatures if necessary.

2. **Superficial check**

- Assessment of documentation and structure.
- Check originality (anti-plagiarism).
- Check terminology and correctness of formulations.

3. **Deep check**

- Check completeness of topic disclosure.
- Assessment of analysis and interpretation of information.
- Comparison with normative sources and methodological recommendations.

4. **Oral defense (if provided)**

- Brief presentation of work (5–7 minutes).
- Answers to teacher's questions (5 minutes).
- Answers to questions of other students (3 minutes).
- Assessment of ability to argue, analyze and apply knowledge.

5. **Setting final grade**

- Teacher sets points for each criterion.
- Signature and date are placed on assessment form.
- Recommendations for revision if necessary.

5. Actions Upon Low Grade

Situation	**Reason**	**Action**
<60 points	Gross errors or noncompliance with requirements	Consultation, revision of work, resubmission/defense
Plagiarism >30%	Unaccep copying	Work returned without grade, new topic required
Partial non-submission or formal approach	Insufficient topic disclosure	Recommendations for revision, resubmission with corrections