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: 3th year, 6th semester
Year of commencement of training: 2023
Duration of education: 5 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
THERAPY-1 OF PEDIATRICS AND DENTAL SPECIALTIES

Protocol No. 1 dated 27.08.2024

Head of Department
Therapy-1 of Pediatrics and Dental specialties _ _ Suranova G.Zh.

Executors
Candidate of Medical Sciences, Associate Professor _ _ Suranova G.Zh.

1. PROFESSIONAL COMPETENCIES (PC)

PC-14: Able to establish diagnosis based on results of biochemical and clinical investigations considering the course of pathology in organs, systems and organism as a whole

Stage	Know	Able to	Master	Types of Assessment Tools
Level 1	Normal values of biochemical parameters of blood, urine and other biological fluids; clinical significance of laboratory deviations; principles of clinical biochemistry	Interpret results of biochemical investigations; interpret results of clinical analyses; correlate laboratory data with clinical presentation	Skills in clinical and laboratory analysis; techniques of laboratory data interpretation	Block A: Tests on knowledge of clinical biochemistry and laboratory diagnostics
Level 2	Pathophysiology of organ and system disorders; patterns of pathological process development; ICD-10 structure and coding principles	Correlate laboratory findings with pathological changes in organs and systems; formulate diagnosis considering organ, system and organism-level pathology	Skills in differential diagnosis; methods of functional state assessment of organs and systems	Block A: Tests on knowledge of clinical biochemistry and laboratory diagnostics
Level 3	Complex diagnostic approaches; integration of clinical and paraclinical data; nosological classification systems	Synthesize clinical and laboratory data for diagnostic conclusions; apply ICD-10 coding for diagnosis formulation	Skills in complex diagnostic analysis; clinical-laboratory correlation	Block B: Situational tasks on diagnostic reasoning
Level 4	—	Evaluate diagnostic significance of biochemical markers in various pathological conditions	—	Block C: Practice-oriented tasks — simulation scenarios of diagnostic process
Level 5	—	Apply complex laboratory panels for differential diagnosis of systemic diseases	—	Block D: Certification questions on comprehensive diagnostics

PC-15: Able to analyze patterns of functioning of individual organs and systems, use knowledge of anatomical and physiological features, basic methods of clinical and laboratory examination and assessment of functional state of organism of adults and children for timely diagnosis of diseases and pathological processes

Stage	Know	Able to	Master	Types of Assessment Tools
Level 1	Anatomical and physiological features of organs and systems; age-related characteristics of organism in adults and children; methods of functional diagnostics	Analyze functioning of individual organs and systems; apply anatomical and physiological knowledge in clinical diagnostics	Skills in functional diagnostics; methods of organ and system state assessment	Block A: Tests on knowledge of anatomy, physiology and functional diagnostics
Level 2	Techniques of clinical and laboratory examination; methods of organism functional state assessment; pathophysiological mechanisms of organ dysfunction	Apply clinical and laboratory examination techniques; assess functional state of organism of adults and children	Skills in functional state assessment; techniques of clinical and laboratory investigation	Block A: Tests on knowledge of anatomy, physiology and functional diagnostics
Level 3	Patterns of pathological process development in organs and systems; early diagnostic markers; principles of timely diagnosis	Identify early signs of organ and system dysfunction; recognize pathological processes at preclinical stages	Skills in early diagnosis of diseases and pathological processes; timely detection techniques	Block B: Situational tasks on early diagnosis
Level 4	—	Integrate functional assessment data for comprehensive evaluation of patient condition	—	Block C: Practice-oriented tasks — simulation scenarios of functional assessment
Level 5	—	Develop individual monitoring plans based on functional state assessment	—	Block D: Certification questions on comprehensive patient assessment

PC-16: Able to use algorithm of diagnosis establishment (primary, concomitant, complications) considering ICD, perform basic diagnostic measures for detection of emergency and life-threatening conditions

Stage	Know	Able to	Master	Types of Assessment Tools
Level 1	Algorithm of diagnosis establishment; structure of primary, concomitant diagnosis and complications; ICD-10 coding principles and structure; criteria for emergency and life-threatening conditions	Apply algorithm of diagnosis establishment considering ICD-10; formulate primary, concomitant diagnosis and complications; identify emergency and life-threatening conditions	Skills in clinical diagnosis formulation; ICD-10 coding; recognition of emergency conditions	Block A: Tests on knowledge of diagnostic algorithms and emergency medicine
Level 2	Basic diagnostic measures for emergency conditions; algorithms of emergency diagnostics; principles of triage	Perform basic diagnostic measures for detection of emergency conditions; apply diagnostic algorithms in urgent situations	Skills in emergency diagnostics; methods of rapid assessment of life-threatening conditions	Block A: Tests on knowledge of diagnostic algorithms and emergency medicine
Level 3	Differential diagnosis of emergency conditions; prioritization in diagnostic search; integration of diagnostic data in time-limited settings	Differentiate between emergency conditions; determine diagnostic priorities; establish diagnosis under time constraints	Skills in differential diagnosis of emergency conditions; algorithmic thinking in urgent situations	Block B: Situational tasks on emergency diagnostics
Level 4	—	Manage diagnostic process in polytrauma and multiple organ failure; coordinate diagnostic team in emergency settings	—	Block C: Practice-oriented tasks — simulation scenarios of emergency care
Level 5	—	Apply advanced diagnostic protocols for life-threatening conditions; integrate point-of-care diagnostics	—	Block D: Certification questions on comprehensive emergency management

PC-18: Able to participate in assessing the quality of medical care using main medical and statistical indicators

Stage	Know	Able to	Master	Types of Assessment Tools
Level 1	Principles and criteria of quality assessment of medical care; main medical and statistical indicators (morbidity, mortality, disability, hospitalization rates); structure of quality management system in healthcare	Identify key quality indicators; collect and systematize data on quality of medical care; calculate basic statistical indicators	Skills in working with medical statistical data; methods of data collection and primary analysis	Block A: Tests on knowledge of healthcare quality management
Level 2	Regulatory framework for quality assessment of medical care; standards of medical care; methods of internal and external quality control; patient satisfaction assessment tools	Apply methods of internal quality control; conduct analysis of medical care quality using statistical indicators; assess compliance with standards of medical care	Skills in comparative analysis of quality indicators; techniques of statistical data processing; methods of patient satisfaction evaluation	Block A: Tests on knowledge of healthcare quality management
Level 3	Methodology of comprehensive assessment of medical care quality; structure-process-outcome model; risk-adjusted indicators; benchmarking in healthcare	Participate in comprehensive assessment of medical care quality; analyze structure, process and outcome indicators; identify factors affecting quality of care	Skills in complex quality assessment; methods of identifying deviations and trends; techniques of root cause analysis	Block B: Situational tasks on quality assessment
Level 4	Quality improvement methodologies (PDCA cycle, Six Sigma, Lean); development of quality improvement programs; indicators of clinical effectiveness and safety	Develop recommendations for quality improvement based on assessment results; participate in development and implementation of quality improvement measures; monitor	Skills in developing quality improvement plans; methods of implementation and monitoring of quality improvement programs	Block C: Practice-oriented tasks — simulation scenarios of quality management

Stage	Know	Able to	Master	Types of Assessment Tools
		effectiveness of interventions		
Level 5	—	Integrate quality assessment data into clinical practice and organizational decision-making; participate in accreditation and certification processes		

STRUCTURE OF ASSESSMENT TOOLS BLOCKS

Block	Content	Competencies
Block A	Tests on knowledge of clinical diagnostics, laboratory medicine, functional diagnostics, emergency medicine and healthcare organization	PC-5 (L1–L2), PC-8 (L1–L2), PC-14 (L1–L2), PC-15 (L1–L2), PC-16 (L1–L2)
Block B	Situational tasks on diagnostic reasoning, interpretation of laboratory data, functional assessment and emergency diagnostics	PC-5 (L3), PC-8 (L3), PC-14 (L3), PC-15 (L3), PC-16 (L3)
Block C	Practice-oriented tasks — simulation scenarios of patient examination, diagnostic process, emergency care and healthcare management	PC-5 (L4), PC-8 (L4), PC-14 (L4), PC-15 (L4), PC-16 (L4)
Block D	Certification questions on comprehensive diagnostics, patient management and emergency medicine	PC-5 (L5–L6), PC-8 (L5), PC-14 (L5), PC-15 (L5), PC-16 (L5)

DISTRIBUTION BY SEMESTERS

Semester	Type of Control	Used Blocks	Competencies
8	Current control (passes by sections)	Block A	PC-5 (L1), PC-8 (L1), PC-14 (L1), PC-15 (L1), PC-16 (L1)
8	Intermediate control (testing + situational tasks)	Block A, Block B (partially)	PC-5 (L1–L3), PC-8 (L1–L3), PC-14 (L1–L3), PC-15 (L1–L3), PC-16 (L1–L3)
8	Practical control (simulation scenarios)	Block C	PC-5 (L4), PC-8 (L4), PC-14 (L4), PC-15 (L4), PC-16 (L4)

Semester	Type of Control	Used Blocks	Competencies
8	Final certification (differentiated pass/exam)	Block A (final), Block B, Block C, Block D	PC-5 (L1–L6), PC-8 (L1–L5), PC-14 (L1–L5), PC-15 (L1–L5), PC-16 (L1–L5)

TECHNOLOGICAL MAP OF THE DISCIPLINE

Module	Name	Control	Form of Control	Min	Max	Week
Module 1	No. 1	Current	Frontal survey, testing, practical skills (examination of endocrine patient), attendance, RSW	2	4	2–4
		Boundary	Oral/written survey, situational task, practical skills	6	10	4
Module 2	No. 2 O	Current	Frontal survey, testing, practical skills, interpretation of analyses, attendance, RSW	2	4	5–7
		Boundary	Oral/written survey, situational task, practical skills	6	10	8
TOTAL for semester				40	70	
Intermediate control (pass)				20	30	8
Semester rating				60	100	

TYPICAL ASSESSMENT TASKS

BLOCK A: Reproductive Level (Knowledge) — Duration: 30 minutes

Questions for Assessment of Learning Outcomes

Question 1. Principal categories of occupational activities and functional duties of a shop physician. (PC-14, U1)

Question 2. On the basis of which regulatory documents are mandatory pre-employment (upon hiring) and periodic medical examinations of workers exposed to hazardous and adverse working conditions conducted? Brief content of appendices to this document. (PC-14, U1)

Question 6. Purpose of pre-employment (upon hiring) and periodic medical examinations. (PC-14, U1)

Question 7. Which directive documents (title and content) should be followed when organizing and conducting preventive medical examinations of workers exposed to hazardous factors of the occupational environment? (PC-14, U1)

Question 8. By what criteria should the quality of preventive medical examinations be evaluated? (PC-14, U1)

Question 10. Name collective therapeutic-preventive and sanitary-hygienic measures to be implemented based on the results of preventive examinations. (PC-14, U1)

Question 24. In which industrial sectors are workers exposed to dust factors? (PC-14, U1)

Question 44. In which industries and occupations are workers exposed to dust factors? (PC-14, U1)

Question 52. What are the directions of technical, sanitary-hygienic, and medical prevention of dust bronchitis? (PC-14, U1)

Question 53. How do you envision the role of the occupational health physician in establishing the relationship of chronic bronchitis with occupation and in developing and implementing preventive measures? (PC-14, U1)

Question 68. List industries in which vibration is an occupational hazard factor. (PC-14, U1)

Question 69. Name principal occupational groups of workers who may be exposed to vibration. (PC-14, U1)

Question 79. List principal measures of medical and hygienic prevention of vibration disease. (PC-14, U1)

Question 80. What is the role of the occupational hygienist in establishing the relationship of disease with occupation and in implementing measures aimed at preventing the development of vibration disease and restoring work capacity? (PC-14, U1)

Question 91. Name principal industries and occupational groups of workers who may be exposed to adverse effects of lead compounds. (PC-14, U1)

Question 98. What is the role of the occupational hygienist and occupational pathologist in establishing the relationship of disease with working conditions of the patient and in implementing preventive measures aimed at preventing lead intoxication, as well as restoring the patient's work capacity? (PC-14, U1)

Question 99. List industries and occupations in which aromatic hydrocarbons are adverse occupational factors. (PC-14, U1)

Question 107. Name industries where contact with mercury and its inorganic compounds is possible. (PC-14, U1)

Question 119. Name the most effective methods of mercurialism prevention. (PC-14, U1)

Question 120. List medical contraindications preventing employment in contact with mercury. What is demercurialization? (PC-14, U1)

Question 131. Prevention of respiratory system lesions by irritant substances. (PC-14, U1)

Question 132. List principal labor processes in which agricultural workers may be exposed to pesticides. (PC-14, U1)

Question 141. Present your understanding of principal MLEC principles in professional pesticide intoxications. List methods of pesticide intoxication prevention in agriculture. (PC-14, U1)

Question 142. Name causes of acute intoxications in industrial conditions. (PC-14, U1)

Question 151. What is the role of the occupational health physician in establishing diagnosis and implementing measures aimed at preventing acute occupational poisonings and preserving workers' health? (PC-14, U1)

2. Test Tasks (Closed Type)

Task 5. The principal document confirming occupational disease is:

- a) outpatient card
- b) MLEC examination report
- c) medical history with detailed occupational history
- d) sanitary-hygienic characteristics

Correct answer: c) medical history with detailed occupational history (PC-14, U2)

BLOCK B: Reconstructive Level (Application) — Duration: 60 minutes

Situational Tasks

Task 1 (PC-14, U2)

Situation: A mine worker with 15 years of work experience presented with complaints of cough with sputum, dyspnea on exertion, and periodic chest pain. Upon examination: radiologically, small nodular opacities were detected in the upper lung lobes, FVC reduced to 65%, silicon particles found in sputum.

Questions:

1. Establish 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 method selection. (10 points)

Evaluation Criteria:

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

Task 2 (PC-14, U2)

Situation: A chemical plant worker (benzene contact) for 10 years, during the shift experienced dizziness, nausea, weakness developed, skin and mucous membranes acquired icteric hue. On examination: BP 90/60 mmHg, pulse 110 bpm, 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 emergency care algorithm. (10 points)
3. Prescribe necessary examination and justify it. (5 points)

Evaluation Criteria:

- Correct identification of acute hemolytic crisis in chronic benzene intoxication — 5 points
- Emergency care algorithm: cessation of contact, gastric lavage, infusion therapy, blood transfusion, hematologist consultation — 10 points
- Prescription of complete blood count with reticulocytes, biochemistry (bilirubin, LDH), coagulogram, liver ultrasound — 5 points

Business Games — Duration: 60 minutes

Game 1: "MLEC Physician-Expert" — 20 points (PC-14, U3)

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

Task: Conduct MLEC session, determine degree of professional work capacity loss, provide employment recommendations.

Evaluation Criteria:

- Correct completion of examination report — 5 points
- Justification of work capacity loss degree considering disease stage, functional impairments, working conditions — 10 points
- Recommendations for rational employment (transfer to less hazardous work, disability) — 5 points

Game 2: "Sanitary-Hygienic Expertise" — 20 points (PC-14, U3)

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

Task: Conduct assessment of working conditions at the workplace (metal grinder), identify hazardous occupational factors, provide conclusion on professional fitness.

Evaluation Criteria:

- Identification of hazardous factors (vibration, dust, noise) — 5 points
- Assessment of hazard degree 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-14, U3)

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

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

Evaluation Criteria:

- First aid algorithm (cessation of exposure, lavage, antidote therapy) — 10 points
- Correct completion of emergency 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 history and clinical examination — 20 points (PC-14, U2)

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

Evaluation Criteria:

- Correct collection of occupational history (seniority, specialty, specific hazardous factors, PPE use) — 5 points
- Identification of subjective symptoms (numbness, tingling, hand pain, vasomotor disorders) — 5 points
- Determination of objective symptoms (Dauborn's, Thomsen's, Welch's symptoms, neurological status) — 10 points

Practical Task 2: Completion of medical documentation — 20 points (PC-14, U3)

Task: Complete MLEC examination report for a patient with stage II silicosis, 20 years work experience, FVC 55%, complaints of dyspnea and cough.

Evaluation Criteria:

- Correct completion of passport section and history — 5 points
- Justification of diagnosis with indication of stage and functional impairments — 10 points
- Formulation of conclusion on degree of work capacity loss and recommendations — 5 points

BLOCK D: Attestation Level (Comprehensive Assessment) — Duration: 120 minutes

Attestation Questions (Examination Tickets)

Ticket No. 1

1. **Theoretical Question:** Pneumoconioses: etiology, pathogenesis, classification, clinical presentation, diagnosis, differential diagnosis, treatment, prevention. Organization of dispensary observation. (30 points) (PC-15, U1–U3)
2. **Practical Skill:** Clinical examination of a patient with vibration disease: determination of autonomic-vascular and neurosensory pathology, identification of characteristic symptoms (Dauborn's, Thomsen's, Welch's, Elkin's, Finkelstein's). Documentation of examination results. (40 points) (PC-16, U3)

3. **Analytical Task:** Interpretation of examination results of a contact shop worker (lead): clinical manifestations, laboratory data (blood lead level, urine coproporphyrin, basophilic stippling of erythrocytes), diagnosis establishment, development of treatment and rehabilitation plan, resolution of work capacity issues. (30 points) (PC-15, U3; PC-16, U3)

Ticket No. 2

1. **Theoretical Question:** Occupational metal intoxications (mercury, lead, manganese): etiology, mechanisms of action, clinical forms, diagnosis, treatment principles, prevention. (30 points) (PC-15, U1–U3)
2. **Practical Skill:** Emergency care in acute intoxication (simulated patient with acute mercury vapor poisoning): action algorithm, antidote therapy, completion of emergency notification. (40 points) (PC-16, U3)
3. **Analytical Task:** Sanitary-hygienic characteristics of a metal grinder's workplace: identification of hazardous factors, assessment of occupational pathology risk, development of prevention measures, conclusion on professional fitness. (30 points) (PC-14, U3; PC-15, U3)

Ticket No. 3

1. **Theoretical Question:** Occupational diseases from physical factors (vibration, noise): pathogenesis, clinical presentation, diagnosis, differential diagnosis, treatment, work capacity examination. (30 points) (PC-15, U1–U3)
2. **Practical Skill:** Conducting pre-employment medical examination of a worker being hired for hazardous working conditions: examination algorithm, determination of professional fitness, documentation completion. (40 points) (PC-14, U2; PC-16, U2)
3. **Analytical Task:** Comprehensive management of a patient with chronic mercury intoxication: clinical manifestations, diagnosis, differential diagnosis with neuroses and multiple sclerosis, treatment, rehabilitation, work capacity examination. (30 points) (PC-15, U3; PC-16, U3)

Ticket No. 4

Topic: Assessment and Improvement of Medical Care Quality

1. **Theoretical question:** Principles and methodology of comprehensive assessment of medical care quality; structure-process-outcome model; main medical and statistical indicators of healthcare effectiveness (30 points)
2. **Practical skill:** Calculation and interpretation of key quality indicators (hospital mortality rate, average length of stay, bed occupancy rate, patient satisfaction index); identification of trends and deviations; development of quality improvement recommendations (40 points)
3. **Analytical task:** Assessment of quality of medical care in therapeutic department using statistical data; analysis of complaints and adverse events; development of comprehensive quality improvement program with monitoring indicators (30 points)

PRACTICAL SKILLS FOR ATTESTATION

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

No.	Skill	Competency	Block	Duration (min)
1.	Sanitary-hygienic characteristics of workplace (by description or at production site)	PC-14 (U3), PC-15 (U3)	D	20
2.	Prescription of laboratory examination methods for occupational intoxications (lead, mercury, benzene determination, their metabolites) with justification	PC-14 (U2, U6), PC-15 (U1)	D	15
3.	Completion of emergency notification of occupational disease and acute occupational poisoning	PC-14 (U3)	D	15
4.	Completion of medical history with detailed occupational history and diagnosis justification	PC-14 (U2), PC-16 (U2)	D	25
5.	Completion of MLEC examination report (diagnosis formulation, degree of work capacity loss, employment recommendations)	PC-14 (U3), PC-16 (U3)	D	25
6.	Determination of degree of professional work capacity loss in pneumoconioses and vibration disease considering stage, functional impairments, working conditions	PC-14 (U3), PC-16 (U3)	D	20
7.	Selection of rational types of work for occupational patients with limited work capacity	PC-14 (U3), PC-16 (U3)	D	15
8.	Conducting pre-employment medical examination upon hiring for hazardous working conditions	PC-14 (U1), PC-16 (U2)	D	20
9.	Conducting periodic medical examination of contact shop worker (lead, mercury, benzene)	PC-14 (U2), PC-16 (U2)	D	25
10.	Development of recommendations for occupational disease prevention at specific	PC-15 (U3), PC-16 (U3)	D	20

No.	Skill	Competency	Block	Duration (min)
	workplace (technical, organizational, medical measures)			

ASSESSMENT METHODOLOGICAL MATERIALS
100-Point Assessment Scale

Activity Type	Passing Minimum	Passing Maximum	% of Final Grade	Note
Current Assessment (Module 1 + Module 2)	4	8	20%	Frontal questioning, testing, practical skills, attendance, R&D
Boundary Assessment (Module 1 + Module 2)	12	20	50%	Oral/written questioning, situational tasks, practical skills
Total for Semester	16	28	70%	Sum of current and boundary assessment for 2 modules
Intermediate Assessment (Credit)	12	20	30%	Final grade for the discipline
Semester Rating for Discipline	60	100	100%	Cumulative assessment of all control types

Assessment Criteria by Mastery Levels

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

Level	Characteristic	Points	Grade	Assessment Tools
	solution of typical tasks			
Practice-Oriented	Solution of professional tasks, mastery of practical skills	85-94	Excellent (B)	Block C: Practice-oriented tasks — simulation scenarios of patient management in polyclinic
Creative	Comprehensive analysis of non-standard situations, making justified decisions	95-100	Excellent (A)	Block D: Attestation questions on comprehensive patient management; analytical tasks on therapy effectiveness assessment

Practical Skills Assessment Criteria (Detailed)
Comprehensive Patient Examination (maximum 40 points):

Criterion	Excellent (36-40)	Good (28-35)	Satisfactory (20-27)	Unsatisfactory (0-19)
History collection technique	Complete, structured history without omissions, correct questions	Complete history, minor inaccuracies in formulations	Main history sections collected, requires leading questions	Incomplete history, incorrect questions
Physical examination technique	Ideal technique, sequence maintained	Minor technique violations	Makes technique errors, requires correction	Gross technique errors
Data interpretation	Correct, with pathology identification	Correct, minor inaccuracies	Partially correct, details missed	Erroneous interpretation
Documentation completion	Competent, per standard	Minor documentation violations	Requires corrections	Does not meet standard

Practical Skills Assessment Criteria:

- Technique of performance — 40%
- Results interpretation — 30%
- Asepsis and antisepsis compliance — 15%
- Patient communication (ethics, tact) — 15%

PRACTICAL SKILLS ASSESSMENT CRITERIA

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

REFERENCES

Primary Sources:

1. Bely TP. Occupational Diseases: Textbook. — M.: MEDpress-inform, 2022. — 480 p.
2. Nagernaya AP, Donskikh VA. 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 Supervision)

1. General Provisions

- Medical history — mandatory work of every student for the discipline
- Student independently supervises a patient (inpatient: 3–5 days, outpatient: 2–3 visits).
- Work includes: history collection, examination, diagnosis formulation, examination and treatment planning.
- Submission deadline: no later than 2 weeks before credit/examination.

Purpose: to assess student abilities in data collection, examination, diagnosis, and treatment planning.

3. Work Execution Algorithm

Stage	Action	Orientation	Instructor Control
Stage 1. Preparation (1 day)			
	Obtain referral from department	Practice schedule, patient list	Signature in log
	Review medical documentation	Medical history, outpatient card, examination results	Department head permission
	Study theory on disease profile	Textbooks, clinical guidelines, protocols	Oral questioning
Stage 2. Data Collection (1–2 days)			
	Collection of complaints and history (Appendix 1.1)	Interview algorithm	Instructor observation
	General examination	Examination technique	Technique correction and presence at examination
	Physical examination	Percussion, auscultation, palpation	Verification of correct symptom identification
	Analysis of laboratory and instrumental data	Norms and interpretation methods	Control of correct interpretation
Stage 3. Documentation			

Stage	Action	Orientation	Instructor Control
Completion (1–2 days)			
	Completion of title page	Ministry of Health medical history form	Verification of details
	Writing medical history sections	Sample documentation	Verification of structure and terminology
	Formulation of preliminary diagnosis	ICD-10, syndromal approach	Verification of correspondence to clinical picture
	Development of examination plan	Standards and algorithms	Assessment of appointment justification
	Development of treatment plan	Clinical guidelines	Verification of contraindication consideration
	Keeping observation diaries	Dynamics keeping rules	Daily control
Stage 4. Work Defense			
	Preparation of brief report	Structure: complaints → diagnosis → treatment → dynamics	—
	Oral defense	Question checklist	Assessment by criteria

Appendix 1.1 Supplement to "Life History" Section

Occupational History (mandatory when occupational disease is suspected): — Occupation, specialty, qualification — Total and specialty work seniority — Specific hazardous occupational factors (chemical, physical, biological, dust, noise, vibration) — Intensity and duration of exposure — Personal protective equipment use (type, regularity) — Previous workplaces with similar hazardous conditions — Seasonality of disease (improvement during vacation, deterioration upon return to work) — Domestic hazards (for differential diagnosis)

3. Medical History Assessment and Verification

3.1 Assessment Structure (100 points)

Medical History Section	**Points**	**Assessment Orientation**
Title page, header	5	Correctness of full name, date of birth, admission date, department, history number, code
Complaints	10	Completeness (subjective + objective), chronology, significant negatives
Life history	10	Systematicity: allergic, epidemiological, hereditary, occupational, living conditions, harmful habits (quantity, duration)
Disease history	15	Logic of presentation: cause, onset, dynamics, pre-admission treatment
Objective examination	20	Completeness: general condition, skin/mucous membranes, lymph nodes, respiratory organs, CVS, GIT, urinary, nervous system; terminology correctness
Instrumental and laboratory methods data	10	Correctness of interpretation, connection with clinical picture, comparison with norm
Preliminary diagnosis	15	ICD-10 formulation, syndromal decoding, diagnosis justification
Differential diagnosis	10	Logic, comparative , justification of alternative exclusion
Examination plan	10	Justification, contraindication consideration, cost-effectiveness
Treatment plan	10	Correspondence to standards, consideration of concomitant pathology and contraindications
Observation diaries (≥3)	5	State dynamics, diagnosis and treatment correction, date and signature
TOTAL	**100**	

3.2 Assessment Criteria by Levels

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

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

1. **Work Acceptance (5 min)**
   - Verify presence of all sections (11 sections)
   - Verify signatures of department head and supervisor
   - Verify supervision duration (≥3 days in diaries)
2. **Superficial Check (10 min)**
   - Originality (anti-plagiarism)
   - Documentation (State Standard/Ministry of Health order)
   - Terminology (medical dictionary)
3. **Deep Check (20-30 min)**
   - Complaints: chronology, negatives
   - Life history: harmful habits quantitatively
   - Objective examination: completeness, description logic
   - Diagnosis: syndromal decoding
   - Treatment plan: specific doses and regimens

- Diaries: dynamics, correction, signatures

4. **Oral Defense (15-20 min)**
   - Verification of material knowledge
   - Verification of clinical thinking
   - Verification of practical skills mastery (simulator)
5. **Grade Assignment (5 min)**
   - Completion of assessment form
   - Instructor signature
   - Student notification of result and improvement recommendations

3.4 Actions for Low Grade

Situation	Cause	Solution
<60 points	Gross errors, incomplete supervision, plagiarism	Consultation, revision with new patient, new topic for plagiarism
60-69 points	Formal approach	Indication of shortcomings, recommendations for independent work, credit with remark

APPENDIX 2. Control and Assessment of Students' Independent Work (SIW)
SIW Topics for Discipline "Occupational Diseases"
Section 1. Subject of Occupational Pathology. Dust Diseases

1. Modern concepts of pneumoconioses pathogenesis. Organization and conduct of examinations of persons working in dust exposure conditions. (PC-14, U1; PC-15, U1)
2. Criteria for etiological diagnosis. Differential diagnosis of asbestosis. (PC-15, U2)
3. Influence of new occupational environment factors on health status of workers. Principles of medical labor examination (MLE) in occupational diseases. (PC-14, U3; PC-16, U1)

Section 2. Occupational Diseases from Exposure to Physical and Toxic-Chemical Factors 4. Etiology, clinical presentation, diagnosis and treatment of chronic mercury intoxication. (PC-15, U1; PC-16, U2) 5. Differential diagnosis of lead intoxication. Influence of benzene and its homologues on the organism. (PC-15, U2; PC-16, U2) 6. Modern concepts of vibration disease pathogenesis. Differential diagnosis. (PC-15, U1; PC-16, U2) 7. Differential diagnosis of occupational diseases of upper extremities. (PC-15, U2; PC-16, U2) 8. Occupational diseases upon exposure to ionizing radiation. (PC-14, U1; PC-15, U1)

1. General Provisions

- Student completes independent work on a topic or section of the course.
- Work may include: information collection, data analysis, report/essay/paper completion and oral presentation preparation.
- Submission deadlines are set by the instructor.

2. Work Assessment Criteria (100 points)

Criterion	Points	Detail
Relevance and goal setting	10	Clear goal, topic correspondence, task choice justification

Criterion	Points	Detail
Content and depth of coverage	30	Material completeness, presentation logic, systematicity
Scientific nature and critical analysis	20	Source use, opinion comparison, analytical approach
Practical significance	15	Connection with practice, knowledge application, decision justification
Formatting and style	15	Literacy, structuring, reference and figure formatting
Work defense	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. Instructor Work Verification Procedure

1. **Work Acceptance**
   - Verification of all work parts presence: title page, contents, main part, reference list.
   - Verification of submission deadlines and signatures if required.
2. **Superficial Check**
   - Assessment of formatting and structure.
   - Originality verification (anti-plagiarism).
   - Terminology and formulation correctness verification.
3. **Deep Check**
   - Verification of topic coverage completeness.
   - Assessment of information analysis and interpretation.
   - Comparison with normative sources and methodological recommendations.
4. **Oral Defense (if provided)**
   - Brief work presentation (5–7 minutes).
   - Answers to instructor questions (5 minutes).
   - Answers to other students' questions (3 minutes).
   - Assessment of ability to argue, analyze and apply knowledge.
5. **Final Grade Assignment**
   - Instructor assigns points for each criterion.
   - Signature and date on assessment form.
   - Revision recommendations if necessary.

5. Actions for Low Grade

Situation	Cause	Action
<60 points	Gross errors or non-compliance with requirements	Consultation, work revision, resubmission/defense
Plagiarism >30%	Unaccep copying	Work returned without grade, new topic required
Partial non-submission or formal approach	Insufficient topic coverage	Revision recommendations, resubmission with corrections

Retake and Appeal Procedure

1. **Boundary assessment retake:** Within 2 weeks after the main date at specially allocated time. Maximum score upon retake — 80% of maximum.
2. **Credit retake:** Within established retake periods. Grade not higher than "satisfactory."
3. **Examination retake:** According to the examination session schedule.