

Ministry of Healthcare of Ukraine  
Poltava State Medical University

Department of Internal Medicine №2

«**AGREED**»

Guarantor of the academic program  
in specialty 222 «Medicine»  
\_\_\_\_\_ (I.M.Skrypnyk)

“ \_\_\_\_\_ ” \_\_\_\_\_ 2024

«**APPROVED**»

Chairman of the Academic Council of the  
Faculty (Institute)

\_\_\_\_\_ (M.M. Riabushko)

Minutes as of \_\_\_\_\_ 2024 No. \_\_

**SYLLABUS**

**INTERNAL MEDICINE, INCLUDING CLINICAL PHARMACOLOGY,  
CLINICAL IMMUNOLOGY AND ALLERGOLOGY, OCCUPATIONAL  
DISEASES**

Compulsory discipline

academic and professional level	the second (master's) level of higher education
field of knowledge	22 «Healthcare»
specialty	222 «Medicine»
academic qualification	Master of Medicine
professional qualification	Medical Doctor
academic and professional program	222 «Medicine»
mode of study	full-time
course(s) and semester(s) of study of the discipline	5th year, IX-X semesters

**Module 2. OCCUPATIONAL DISEASES**

5th year of study

«**RESOLVED**»

at a joint meeting of departments  
internal medicine №2

Head of the Department \_\_\_\_\_ I.P. Katerenchuk

Minutes as of \_\_\_\_\_ 2024 No. \_\_

Poltava 2024

## INFORMATION ABOUT LECTURERS WHO DELIVER THE ACADEMIC DISCIPLINE

Surname, name, patronymic of the lecturer (lecturers), scientific degree, academic title	Kostrikova Iuliya Anatoliivna - Ph.D. of Medical Sciences, docent Mohnachov Oleksandr Volodymyrovych - Ph.D. of Medical Sciences, Assistant
Profile of the lecturer (lecturers)	<a href="https://int-med-two.pdmu.edu.ua/team">https://int-med-two.pdmu.edu.ua/team</a>
Contact phone	+380675301401
E-mail:	<a href="mailto:vnutrmed2@pdmu.edu.ua">vnutrmed2@pdmu.edu.ua</a>
Department page at the website of PSMU	<a href="https://int-med-two.pdmu.edu.ua">https://int-med-two.pdmu.edu.ua</a>

### MAIN CHARACTERISTICS OF THE COURSE

#### The amount of the discipline

Number of credits / hours – 1,5/45, of which:

Lectures (hours) – 6

Practical (seminars) (hours) – 14

Independent work (h) – 25

Type of control - semester final certification (SFC)

Signs of academic discipline

The nature of the discipline is normative

Year of study - 5

#### The policy of the academic discipline

"Internal medicine, including clinical pharmacology, clinical immunology and allergology, professional diseases» Module 2 "Professional Diseases" is determined by the system of requirements that scientific and pedagogical workers are presented to educational applicants in the study of discipline and is based on the principles of academic righteousness.

<https://www.pdmu.edu.ua/fakultets/med/akademichna-dobrochesnist-ft-med-one-tvmb>)

- Compliance with the academic righteousness of applicants education courses includes:
- self-execution of educational tasks, tasks of current and final control of learning outcomes;
- Reference to sources of information in case of use of ideas, developments, statements, information;
- Compliance with regulations of copyright and related rights;
- Providing reliable information on the results of its own educational or scientific activity, used methods of research and source of information.

Violation of academic righteousness is: Academic plagiarism, self-plagiarism, forgery, cheating, fraud.

For violation of academic righteousness of education, liability may be prosecuted in accordance with normative documents.

Applicants education, learning discipline "Internal medicine, including clinical pharmacology, Clinical Immunology and Allergology, occupational disease" Module 2 "Occupational diseases" shall:

- to comply with the schedule of the educational process and prevent the non-fulfillment of the curriculum and individual curriculum without valid for the reasons,
- come to classes in time, according to the schedule of classes
- (<https://www.umsa.edu.ua/schedule>)
- to comply with labor protection, safety techniques, industrial sanitation, fire safety provided by relevant rules and instructions;
- To comply with the appearance of the appearance (dress code) of persons approved by the decision of the rectorate of 29.08.2014
- Support the order in the training rooms, carefully and tenderly relate to the property of the department (furniture, computer technology, textbooks);
- not to move without permission of scientific and pedagogical workers of things and various equipment from training rooms and the department, and in the event of deliberate damage - to compensate their value in accordance with the procedure established by the current legislation;
- Compliance with the moral and ethical principles of staying on the territory of clinical bases.

Applicants, studying the discipline "Occupational Diseases", are prohibited from:

- leave the classroom during the lesson without the permission of the teacher;
- use a mobile phone and other means of communication and receive information without the teacher's permission;
- engage in extraneous activities, distract other students and interfere with the teacher;
- use drugs, psychotropic substances and their analogues, alcoholic beverages at the department, smoke on the territory of the department and be in the department in a state of alcohol, drugs or other intoxication;
- to commit illegal and immoral actions that may create dangerous conditions for the health and / or life of others, which degrade human dignity, to use profanity;

(Rules of procedure for students of Poltava State Medical University: (<https://www.pdmu.edu.ua/n-process/department-npr/normativni-dokumenti>))

### **Description of the academic discipline (summary)**

Module 2 "Occupational Diseases" of the discipline "Internal Medicine, including clinical pharmacology, clinical immunology and allergology, occupational diseases" involves the study of the basics of occupational diseases, with emphasis on the study of etiology, pathogenesis, occupational route, clinic, diagnosis, treatment and prevention of the main and most common occupational pathology.

Applicants participate in the diagnostic and treatment process of patients under the guidance of teachers of the department. It is also provided to master / get acquainted with the procedures most often used in the practice of internal medicine. Practical

classes, clinical tours with assistants, associate professors and professors of the department are the main part of this course.

**The subject** of the discipline is theoretical knowledge and practical skills in public health in the field of occupational pathology: prevention, diagnosis and treatment of occupational diseases, necessary for the professional activities of a specialist in the specialty: "Medicine".

**Pre-requisites and post-requisites of the academic discipline (interdisciplinary links):**

Module 2 "Occupational Diseases" as a discipline:

a) is based on the study of medical chemistry, biological and bioorganic chemistry, medical and biological physics, pathological physiology, pathological anatomy, pharmacology, hygiene and ecology, social medicine, organization and economics of health care, propaedeutics of internal medicine, internal medicine, tuberculosis, dermatology, venereology, psychiatry, narcology, otorhinolaryngology, obstetrics and gynecology, neurology, traumatology and orthopedics, etc. and integrates with these disciplines;

b) laying the foundations of higher education applicants studying internal medicine and other clinical disciplines, which involves the integration of teaching with these disciplines and forming of abilities to apply knowledge of occupational diseases in further education and professional activities;

c) lays the foundations of a healthy lifestyle and prevention of dysfunction in the work process.

### **1.The purpose and objectives of the discipline:**

**1.1.The purpose** of teaching Module 2 "Occupational Diseases" is to master the theoretical knowledge and practical skills in public health in the field of occupational pathology; prevention, diagnosis and treatment of occupational diseases necessary for the professional activities of a specialist in the specialty: "Medicine".

**1.2.The main objectives** of the study of Module 2 "Occupational Diseases" are to master the theoretical knowledge and practical skills and abilities to:

- conducting a clinical examination of the patient, establishing a preliminary diagnosis and determining the tactics of management of patients with the most common occupational diseases;
- analysis of the results of sanitary and hygienic characteristics of working conditions with the solution of the question of the professional etiology of the diagnosed disease;
- interpretation of clinical and paraclinical data for occupational diseases;
- differential diagnosis between probable occupational and other occupational or non-occupational diseases that have common clinical features, and the formulation of a clinical diagnosis;
- drawing up a plan of treatment measures for acute and chronic occupational diseases in accordance with the approved sectoral clinical guidelines and protocols for medical care;

-principles of professional selection in compliance with relevant ethical and regulatory norms;

- development of a plan for medical examination of patients at risk;

- carrying out sanitary-hygienic and medical-preventive measures in order to prevent the development of occupational diseases and their progression;
- examination of working capacity and rational employment for occupational diseases.

**Competences and learning outcomes, the formation of which is facilitated by the discipline (integral, general, special, matrix of competencies)**

According to the requirements of the standard, the discipline provides students with the acquisition of competencies:

**Integral competence:** the ability to solve complex specialized problems and practical problems in professional activities in the field of health care in the specialty "Medicine", or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements ;

**General competencies:**

**GC1.** Ability to abstract thinking, analysis and synthesis, the ability to learn and master modern knowledge.

**GC2.** Ability to apply knowledge in practical situations.

**GC3.** Knowledge and understanding of the subject area and understanding of professional activity..

**GC4.** Ability to adapt and act in a new situation..

**GC5.** Ability to make informed decisions; work in a team; interpersonal skills.

**GC6.** Ability to communicate in the state language both orally and in writing; ability to communicate in a foreign language. Ability to use international Greco-Latin terms, abbreviations and clichés in professional oral and written speech.

**GC7.** Skills in the use of information and communication technologies..

**GC8.** Definiteness and perseverance in terms of tasks and responsibilities.

**GC9.** The ability to act socially responsibly and consciously.

**Special (professional, subject) competencies:**

**SC1** Patient interviewing skills.

**SC2** Ability to determine the required list of laboratory and instrumental studies and evaluate their results.

**SC3** Ability to establish a preliminary and clinical diagnosis of the disease.

**SC4** Ability to determine the required mode of work and rest in the treatment of diseases

**SC5** Ability to determine the nature of nutrition in the treatment of diseases.

**SC6** Ability to determine the principles and nature of disease treatment.

**SC7** Ability to diagnose emergencies.

**SC8** Ability to determine the tactics of emergency medical care.

**SC9** Emergency care skills

**SC10** Ability to carry out medical and evacuation measures

**SC11** Skills to perform medical manipulations.

**SC15** Ability to determine the tactics of management of persons subject to dispensary supervision.

**SC16** Ability to conduct an examination of working capacity.

## **SC17** Ability to keep medical records.

*Program learning outcomes, the formation of which contributes to a better study of the discipline as a whole, including Module 1:*

**PLO1** To know the structure and functions of individual organs and systems and the human body as a whole in the norm, with the development of pathological processes, diseases; to be able to use the acquired knowledge in further training and in the practice of the doctor.

**PLO2** To collect data on patient complaints, life history (professional history in particular) in a health care facility and / or at home with the patient, according to the standard survey scheme.

**PLO3** Assign and analyze additional (mandatory and optional) examination methods (laboratory, radiological, functional and / or instrumental). Evaluate information for the purpose of differential diagnosis of diseases (according to list 2), using knowledge about the person, his organs and systems, based on the results of laboratory and instrumental research (according to list 4).

**PLO4** Establish a preliminary and clinical diagnosis of the disease (according to list 2) on the basis of leading clinical symptoms or syndromes (according to list 1) by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, laboratory and instrumental examination, conclusions of differential diagnosis, knowledge about a person, his organs and systems, adhering to the relevant ethical and legal norms.

**PLO5** To determine the necessary mode of work and rest in the treatment of the disease (according to list 2) in a health care facility, at home of the patient and at the stages of medical evacuation, including in the field, on the basis of a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

**PLO6** To prescribe the necessary medical nutrition in the treatment of the disease (according to list 2), in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field on the basis of a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

**PLO7** To determine the nature of treatment of the disease (conservative, operative) and its principles (according to list 2) in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field on the basis of a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision according to existing algorithms and standard schemes.

**PLO8** To diagnose emergencies and establish a diagnosis (according to list 3) by making an informed decision and assessing the human condition under any circumstances (at home, on the street, in a health care facility), including in emergency situations, in field conditions, in conditions of lack of information and limited time, using standard methods of physical examination and possible anamnesis, knowledge

about a person, his organs and systems, adhering to the relevant ethical and legal norms.

**PLO9** To determine the tactics of emergency medical care, under any circumstances, using knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision, based on the diagnosis (list 3) for a limited time with standard schemes.

**PLO10** To provide emergency medical care under any circumstances, using knowledge of the person, his organs and systems, adhering to the relevant ethical and legal norms, by making an informed decision, based on a diagnosis of emergency (list 3) in a limited time according to certain tactics using standard schemes.

**PLO12** To perform medical manipulations (according to list 5) in a health care facility, at home or at work on the basis of a previous clinical diagnosis and / or indicators of the patient's condition, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms, making an informed decision and using standard techniques.

**PLO16** To determine the tactics of management of persons subject to dispensary supervision in a health care institution or at the patient's home on the basis of the obtained data on the patient's health, using standard schemes, using knowledge about the person, his organs and systems, adhering to relevant ethical and legal norms by making an informed decision.

**IPPH17** To carry out an examination of working capacity by determining the presence and degree of disability, type, degree and duration of disability with the execution of relevant documents in a health care facility on the basis of data on the disease and its course, features of professional activity.

**PLO18** Maintain medical records of the patient and the population on the basis of regulatory documents, using standard technology. Prepare reports on personal production activities, using official accounting documents in the standard form.

**PLO23** Forming goals and determine the structure of personal activities based on analysis of certain social and personal needs.

**PLO24** To adhere to a healthy lifestyle, use the techniques of self-regulation and self-control.

**PLO25** To be aware of and guided in their activities by civil rights, freedoms and responsibilities, constantly improving professional and cultural levels.

**PLO26** Adhere to the requirements of ethics, bioethics and deontology in their professional activities.

**PLO27** To provide the necessary level of personal security (their own and the persons concerned) in the case of typical dangerous situations in the individual field activity.

**Thematic plan of lectures with the indication of the main issues considered at the lecture**

<b>№</b>	<b>Topic</b>	<b>Number of hours</b>
1	<b>Content module 1. General issues of occupational pathology. Diseases caused by industrial aerosols</b>	
	General issues of occupational pathology. Pneumoconiosis. Silicosis. Silicatosi	2
2	<b>Content module 2. Diseases caused by the action of</b>	

	<b>physical factors and overexertion of individual organs and systems</b>	
	Vibration disease and neurosensory deafness. Altitude and caisson diseases	2
3	<b>Content module 3. Diseases caused by chemical factors</b>	
	Occupational benzene intoxication	2
	<b>Total</b>	6

**Thematic plan of practical classes with content modules with indication of the main issues considered in the practical lesson**

<b>№</b>	<b>Topic</b>	<b>Number of hours</b>
1	Pneumoconiosis. Chronic bronchitis and chronic obstructive pulmonary disease of dust etiology. Occupational respiratory diseases of toxic-chemical etiology.	2
2	Vibration disease and neurosensory deafness. Altitude and decompression sickness. Occupational diseases caused by electromagnetic radiation and ultrasound, the action of adverse factors of the industrial microclimate.	2
3	Occupational diseases associated with overexertion of certain organs and systems. Occupational neurotoxicosis.	2
4	Occupational intoxication with substances with a predominant effect on the blood system: occupational benzene intoxication. Occupational intoxications with amino and nitro compounds of benzene, carbon monoxide.	2
5	Professional intoxication with lead, arsenic hydrogen. Occupational toxic hepatitis and toxic nephropathy.	2
6	Occupational intoxications with pesticides used in agricultural work.	2
7	<b>Final modular control</b>	2
	<b>Total</b>	14

**Individual tasks**

<b>№</b>	<b>Topic</b>	<b>Number of hours</b>
1.	Preparation for practical classes on topics - theoretical training and development of practical skills	21
2.	Elaboration of additional topics that are not included in the list of topics of practical classes is not provided by the program	-
3.	Writing and preparing to defend a medical history. Preparation for the semester final certification	4
<b>Total</b>		<b>25</b>

**Individual tasks**



- Execution of a research task with writing an analytical review of the literature in the format of an abstract on a topic that is part of the program in the discipline "Occupational Diseases";
- Supervision of the patient (patients) in excess of the regulated program in the discipline "Occupational Diseases" with subsequent participation in clinical analysis;
- Execution of individual research work within the framework of collective research work of the department, which teaches the discipline "Occupational Diseases", with further analysis of data and testing and publication of results, etc. ;

**The list of theoretical questions for preparation of applicants of higher education for the final modular control**

1. Occupational pathology as a clinical discipline. Classification of occupational diseases.
2. Historical information on the doctrine of occupational diseases.
3. Organization of occupational pathology service and structure of occupational morbidity in Ukraine.
4. Medical ethics and issues of medical deontology in the clinic of occupational diseases.
5. Features of clinical examination and diagnosis of occupational diseases.
6. Organization and conduct of preliminary and periodic medical examinations of employees.
7. Principles of prevention of occupational poisonings and diseases.
8. Medical and labor examination of occupational diseases, medical and occupational rehabilitation.
9. Pneumoconiosis: etiology, pathogenesis, classification, diagnosis, treatment.
10. The main issues of prevention of pneumoconiosis; examination of working capacity.
11. Silicosis: pathogenesis, clinical signs, diagnosis, complications, treatment, examination of efficiency.
12. Coniotuberculosis: pathogenesis, classification, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
13. Silicatoses (asbestosis, cement pneumoconiosis): clinical signs, diagnosis, complications, treatment, examination.
14. Carboconioses (anthracosis, graphitis): clinical signs, diagnosis, treatment, examination of efficiency.
15. Metalloconiosis (siderosis, aluminosis): clinical signs, diagnosis, treatment, examination of efficiency.
16. Pneumoconiosis of electric welders: clinical signs, diagnosis, treatment, prevention, examination of efficiency.
17. Berylliosis: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination.
18. Bisinosis: features of clinical signs, diagnosis, treatment, examination of working capacity.
19. Exogenous allergic alveolitis: etiology, pathogenesis, clinical manifestations, diagnosis, prevention, issues of medical examination and occupational rehabilitation.

20. Chronic bronchitis: types of industrial dust that mainly cause the development of chronic bronchitis, definition, pathogenesis, classification, clinical symptoms and syndromes, diagnostic methods, basic treatment.
21. Chronic obstructive pulmonary disease of dust etiology: etiology, types of industrial dust that mainly cause the development of COPD, pathogenesis, classification, features of clinical symptoms and course, complications, diagnosis, treatment, issues of medical examination, issues of rational employment, issues of prevention.
22. Influence of electromagnetic waves of radio frequencies on a human body: mechanism of action, the basic clinical syndromes, treatment, prevention, examination of working capacity.
23. The effect of laser radiation on the human body: mechanism of action, clinical signs, treatment, prevention, examination of efficiency.
24. Occupational diseases caused by ultrasound.
25. Overheating in the working environment: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
26. Hypothermia in the production environment: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
27. Identify the main professions that belong to the risk group for occupational diseases of the musculoskeletal system.
28. The main clinical forms of occupational dyskinesias: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination.
29. Differential diagnosis of occupational diseases of the musculoskeletal system.
30. Chronic myofibrosis: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
31. Bursitis: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination.
32. Periarthritis of the shoulder joint: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
33. Mono- and polyneuropathy of the upper and lower extremities. Vegetative-sensory radiculopathy and radiculomyelopathy: clinical signs, diagnosis, treatment, prevention, examination of working capacity.
34. Classification of occupational diseases of the blood system. General blood test with leukocyte formula.
35. Benzene intoxication: classification, mechanism of action, clinical signs, diagnosis, treatment, prevention, examination of efficiency.
36. Intoxication with amino and nitro compounds of benzene: pathogenesis, clinical signs, diagnosis, treatment, examination, prevention.
37. Carbon (II) oxide poisoning: mechanism of action, classification, clinical signs, diagnostics, prevention, examination of working capacity.
38. Arsenic intoxication: pathogenesis, clinical signs, diagnosis, treatment, examination, prevention.
39. Saturnism: the pathogenesis of hematological disorders.
40. Lead intoxication: features of clinical signs, clinical types of disease.
41. The main diagnostic criteria for sideroachrestic anemia in patients with lead intoxication.
42. Methods of treatment of lead intoxication. Preventive measures. Examination of working capacity.

43. Characteristics of neurotropic substances.
44. Mercury poisoning: pathogenesis, classification, clinical signs, diagnosis, treatment, prevention, examination.
45. Manganese poisoning: pathogenesis, classification, clinical signs, diagnosis, treatment, prevention, examination.
46. Tetraethyl lead poisoning: pathogenesis, classification, clinical, treatment, prevention, examination of efficiency.
47. Carbon disulfide intoxication: pathogenesis, clinical signs, treatment, prevention, examination of efficiency.
48. Poisoning by organochlorine compounds: pathogenesis, clinical signs, treatment, examination of efficiency, prevention.
49. Poisoning by organophosphorus compounds: pathogenesis, clinical signs, treatment, examination of efficiency, prevention.
50. Poisoning by organomercury compounds: pathogenesis, clinical signs of treatment, examination of efficiency, prevention.
51. Poisoning by compounds containing arsenic: pathogenesis, clinical signs, treatment, examination, prevention.
52. Poisoning by carbamic acid derivatives: pathogenesis, clinical signs, treatment, performance examination, prevention.
53. Pesticide poisoning: classification, pathogenesis, clinical signs, diagnosis, examination, prevention.
54. Intoxication with arsenic hydrogen: pathogenesis, clinical signs, treatment, examination of efficiency, prevention.
55. Basic principles of emergency care and antidote treatment of acute occupational poisoning.
56. Vibration disease due to the action of local vibration: pathogenesis, classification, features of clinical signs, basic syndromes, diagnosis, differential diagnosis, treatment, examination of efficiency, prevention.
57. Vibration disease due to the action of general vibration: pathogenesis, classification, features of clinical signs, basic syndromes, diagnosis, differential diagnosis, treatment, examination, efficiency, prevention.
58. Methods of laboratory and instrumental diagnosis of vibration disease.
59. Neurosensory deafness: pathogenesis, classification, clinical, diagnosis, treatment, examination, efficiency, prevention.
60. Caisson disease: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination.
61. Altitude sickness: the mechanism of action of reducing the partial pressure of oxygen in the inhaled air, clinical signs, treatment, prevention.
62. Modern ideas about the effect of toxic and chemical agents on the bronchopulmonary system.
63. Acute lesions of the respiratory organs of toxic-chemical etiology: pathogenesis, clinical signs, diagnosis, treatment, examination, prevention.
64. Acute toxic pulmonary edema: pathogenesis, clinical signs, complications, treatment.
65. Chronic lung lesions of toxic-chemical etiology: pathogenesis, clinical signs, diagnosis, treatment, prevention, examination of efficiency.

66. Characteristics of hepatotropic substances.
67. Pathogenetic features of toxic hepatitis.
68. Toxic hepatitis: clinical forms depending on the chemical factor.
69. Treatment of toxic hepatitis. Methods of prevention. Examination of working capacity.
70. Characteristics of chemicals that have a nephrotoxic effect. The main industries are the increased risk of exposure to these substances.
71. Diseases of the kidneys and urinary tract of professional origin.
72. Toxic nephropathy: pathogenesis, features of clinical signs, prevention, treatment, examination of working capacity.
73. Occupational allergies: differential diagnosis, treatment.
74. Occupational bronchial asthma: characteristics of allergens that cause occupational bronchial asthma.
75. Classification of occupational bronchial asthma; pathogenesis.
76. Clinical manifestations of occupational bronchial asthma; features of diagnostics; prevention; examination of working capacity.
77. Characteristics of occupational carcinogens - chemical, physical and biological factors.

#### **List of practical skills for final module control and semester final certification**

In the learning process, students must:

1. Acquire skills to identify and assess radiological and spirographic changes that are characteristic of pneumoconiosis and other "dust" pathology.
2. Have the skills of functional diagnosis (palesthesiometry, algessiometry, capillaroscopy, cold test, audiometry) and evaluation of their results.
3. To master the methods of analysis of professional history and sanitary and hygienic characteristics of working conditions and use them in the diagnosis of occupational diseases.
4. Formulate a preliminary diagnosis of an occupational disease caused by exposure to industrial noise, physical and toxic factors of the production environment.
5. Carry out a differential diagnosis between the presumed occupational and non-occupational disease that has similar clinical symptoms.
6. Prescribe treatment, make a plan of individual preventive and rehabilitation measures for occupational diseases, plans for preliminary and periodic medical examinations.

#### **Form of final control of academic performance - Final modular control (PMK)**

#### **Scheme of calculation and distribution of points received by applicants for higher education**

Control measures for assessing the educational activities of higher education students include current and final control of knowledge, skills and abilities.

Control measures are based on the principles of: compliance with higher education standards; use of a standardized and unified diagnostic system aimed at the application of knowledge; definition of evaluation criteria; objectivity and transparency of control technology.

The researcher must evaluate the success of the higher education applicant in each lesson on a four-point (traditional) scale.

Assessment of success is integrated (all types of work of students are evaluated both in preparation for the lesson and during the lesson) according to the criteria that are communicated to them at the beginning of the discipline. Conversion of the current grade, set on the traditional 4-point scale, to multi-point in each lesson is not carried out.

*Table 1. Criteria for assessing the knowledge of students::*

On a 4-point scale	Assessment in ECTS	Evaluation criteria
5 perfectly	A	The student shows special creative abilities, is able to acquire knowledge independently, without the help of the teacher finds and processes the necessary information, is able to use the acquired knowledge and skills for decision-making in unusual situations, convincingly argues answers, independently reveals own talents and inclinations, possesses not less than 90 % of knowledge on the topic both during the survey and all types of control.
4 good	B	The student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standardized situations, independently corrects errors, the number of which is insignificant, has at least 85% knowledge of the topic both during the survey and all types of control.
	C	The student is able to compare, summarize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently apply it in practice, control their own activities; to correct mistakes, among which there are significant, to choose arguments for confirmation of opinions, possesses not less than 75% of knowledge on a subject both during interrogation, and all types of control.
3 satisfactorily	D	The student reproduces a significant part of the theoretical material, shows knowledge and understanding of the basic provisions, with the help of a scientific and pedagogical worker can analyze the educational material, correct mistakes, among which there are a significant number of significant ones. Has at least 65% knowledge of the topic both during the survey and all types of control.
	E	The student has the educational material at a level higher than the initial, a significant part of it reproduces at the reproductive level. Has at least 60% knowledge of the topic both during the survey and all types of control.
2 unsatisfactorily	FX	The student has the material at the level of individual fragments that make up a small part of the material. Has less than 60% knowledge of the topic both during the survey and all types of control.
	F	The student has the material at the level of elementary recognition and reproduction of individual facts, elements, has less than 60% knowledge of the topic both during the survey and all types of control.

**The final module control** is carried out upon completion of the study of the program material of the module in the discipline at the last practical lesson.

Applicants for higher education who are:

- scored the required minimum number of points during the current control (average score of 3.0 and above),

- do not have unused passes of lectures and practical classes,
- mastered the topics made for independent work within the module.

The FMC score is evaluated in points and is not converted into a traditional 4-point score. The maximum number of PMK points is 80 points. The minimum number of FMK points at which the control is considered to be made is 50 points. The maximum number of points for the module is 200 points (up to 120 points for the current performance).

Methods of conducting the final modular control (FMC)

is conducted in the form of an examination-testing, by answering 80 test questions by the student.

The correct answer to 50-60 questions corresponds to a score of "3"; for 60-70 test questions with a grade of "4", for 70-80 questions with a grade of "5".

In case of violation by the applicant of higher education of the rules of academic integrity (p.2.2.5. Of the Rules of Procedure), the evaluation results obtained during the preparation of the FMC for the answer are not credited, the grade is "unsatisfactory".

Applicants for higher education, who during the study of the module from which the final control is conducted, had an average score of current performance from 4.50 to 5.0 are exempted from the FMC and automatically (by agreement) receive a final grade according to the scheme of calculation and distribution of points ( see below), and the presence of the student at the FMC is mandatory. In case of disagreement with the assessment, this category of higher education seekers is FMK according to the general rules.

The applicant for higher education has the right to compile and re-compile FMK.

The total score for the module is defined as the sum of the scores of the current performance and FMK.

Scheme of accrual and distribution of points received by applicants for higher education for the current performance of points for FMC, exam and traditional four-point assessment

Middle ball for current progress (A)	Ball for current progress from the module (A*24)	Ball for FMC with module. (A*16)	Points for the module and / or exam (A*24 + A*16)	Category ECTS	By 4-point scale
1	2	3	4	5	6
2	48	32	80	F FX	2 unsatisfactorily
2,1	50	34	84		
2,15	52	34	86		
2,2	53	35	88		
2,25	54	36	90		
2,3	55	37	92		
2,35	56	38	94		
2,4	58	38	96		

2,45	59	39	98		
2,5	60	40	100		
2,55	61	41	102		
2,6	62	42	104		
2,65	64	42	106		
2,7	65	43	108		
2,75	66	44	110		
2,8	67	45	112		
2,85	68	46	114		
2,9	70	46	116		
2,95	71	47	118		
3	72	50	122		
3,05	73	50	123		
3,1	74	50	124		
3,15	76	50	126		
3,2	77	51	128		
3,25	78	52	130		
3,3	79	53	132		
3,35	80	54	134		
3,4	82	54	136		
3,45	83	55	138		
3,5	84	56	140		
3,55	85	57	142		
3,6	86	58	144		
3,65	88	58	146		
3,7	89	59	148		
3,75	90	60	150		
3,8	91	61	152		
3,85	92	62	154		
3,9	94	62	156		
3,95	95	63	158		
4	96	64	160		
4,05	97	65	162		
4,1	98	66	164		
4,15	100	66	166		
4,2	101	67	168		
4,25	102	68	170		
4,3	103	69	172		
4,35	104	70	174		
4,4	106	70	176		
4,45	107	71	178		
4,5	108	72	180		
4,55	109	73	182		
4,6	110	74	184		

4,65	112	74	186		
4,7	113	75	188		
4,75	114	76	190		
4,8	115	77	192		
4,85	116	78	194		
4,9	118	78	196		
4,95	119	79	198		
5	120	80	200		

### **Teaching methods**

- verbal (explanation, story, conversation, instruction)
- visual (observation, illustration, presentation)
- practical (by clinical examination of the patient to interpret and describe changes in organs and systems in various pathological conditions)
- explanatory-illustrative or information-receptive (coverage of ready-made information by a research and pedagogical worker and its assimilation by students)
- thematic discussions, clinical trials
- analysis of specific clinical situations
- partial search, research methods.

### **Control methods**

*Entrance control* is carried out at the first practical lesson in order to determine the readiness of higher education students to master the discipline by using test control of their basic training.

*Current control* is carried out during practical classes, which assess the knowledge of theoretical and practical material in the form of:

- individual oral examination on theoretical issues;
- test tasks;
- solving situational problems;
- drawing up a plan of examination of the patient and the ability to interpret the data obtained;
- ability to apply practical skills;
- registration of the plan of treatment of patients.

*Final control* is to assess the assimilation of higher education students of educational material in the discipline (or part thereof) on the basis of current control.

### **Methodical support:**

1. Plans for lectures, practical classes and independent work of higher education students.
2. Syllabus on discipline.
3. Methodical development of lectures on the discipline.
4. Methodical recommendations for the teacher.
5. Methodical instructions for independent work of applicants for higher education in preparation for practical training.



6. Test and control tasks for practical classes.
7. Questions and tasks to control the assimilation of the section.
8. List of questions to the PMC.
9. Training materials (textbooks, manuals).
10. Visual aids (tables, stands, multimedia materials).

### **Recommended Books**

#### **Main**

1. Occupational Diseases: textbook (III—IV a. l.) / V.A. Kapustnik, I.F. Kostyuk, H.O. Bondarenko et al.; edited by V.A. Kapustnik, I.F. Kostyuk. — 2nd edition «Медицина».- 2018.- 496 с.

#### **Additional**

1. Occupational Medicine: Board and Certification Review Kindle Edition by Statpearls Publishing LLC, David Vearrier, Jayshree Chander, Paul Darby. 2021.
2. 500 MCQs in Occupational Medicine: Multiple choice questions and revision in occupational medicine Kindle Edition by Nicholas O'Keeffe. 2020
3. Occupational Health Edited by Orhan Korhan. IntechOpen. 2017
4. Environmental health disparities : costs and benefits of breaking the cycle Rubin, Leslie (I. Leslie), editor.; Merrick, Joav. New York : Nova Publishers 2016
5. A companion to the anthropology of environmental health Singer, Merrill. Chichester, England : Wiley Blackwell. 2016
6. Environmental health science : recognition, evaluation, and control of chemical health hazards Lippmann, Morton, author.; Schlesinger, Richard B. 2018
7. Unhealthy Work: Causes, Consequences, Cures (1st Edition) by Paul A. Landsbergis, Ellen Rosskam, Peter L. Schnall. Hardcover - September 2009.
8. Management of emerging public health issues and risks : multidisciplinary approaches to the changing environment Roig, Benoit, editor.; Thireau, Véronique, editor. 2019
9. Applied Theories in Occupational Therapy: A Practical Approach, Second Edition. Marilyn B. Cole, MS, OTR/L, FAOTA; Roseanna Tufano, LMFT, OTR/L. SLACK Ink. 2019. 424 pp.
10. The Handbook of Occupational and Environmental Medicine: Principles, Practice, Populations, and Problem-Solving, 2nd Edition [2 volumes]. Tee Guidotti. Praeger 2020.
11. Textbook Of Occupational Medicine Practice (Fourth Edition). David Soo Quee Koh (ed.); Tar-ching Aw (ed.). World Scientific 2017
12. Becoming an Occupational therapist Chris McKenna; Cath Wright McKenna. BPP Learning Media Ltd 2016

13. Fundamentals of Occupational Safety and Health. Mark A. Friend; James P. Kohn. Bernan Press 2018
14. Occupational and Environmental Health. Barry S. Levy (ed.); David H. Wegman (ed.); Sherry L. Baron (ed.); Rosemary K. Sokas (ed.). Oxford University Press 2017

#### **Informational resources**

<http://www.umj.com.ua/article/organization/institut-medicyny-truda-amn-ukrainy>  
<http://ohoronapraci.kiev.ua/ua>  
[http://archive.nbu.gov.ua/portal/Chem\\_Biol/Ujpmmp/](http://archive.nbu.gov.ua/portal/Chem_Biol/Ujpmmp/)  
<http://www.occup-med.com/>  
<http://occmed.oxfordjournals.org/>  
<http://eng.med.wanfangdata.com.cn/JournalDetail.aspx?qid=zhldwszyb>

#### **Developers:**

**Katerenchuk I.P. - Head of the Department, Doctor of Science in Medical Sciences,  
Professor**

**Yarmola T.I. - docent, Ph.D. of Medical Sciences**

**Kostrikova Iu.A. - docent, Ph.D of Medical Sciences**