SYLLABUS

1. General information on the course

Full course name	Occupational Diseases
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Medical Institute. Department of Neurosurgery and Neurology with Courses of Psychiatry, Narcology, Medical Psychology, Occupational diseases
Author(s)	Kolenko Oksana Ivanivna, Sotnikov Dmytro Dmytrovych
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	18 weeks across 9 and 10 semester
Workload	Discipline in 5 credits. ECTS, 150 hours (36 hours is contact work with the teacher, 114 hours of self-education)
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	Krok-1, Biogeochemistry, Pathological Anatomy, Normal Physiology, Pathophysiology, Internal Diseases, Propedeutics of Internal Medicine with Care of Patients, Hygiene, Social Medicine, Organization and Economics of Health Protection, Phtysiatrics, Dermatology and Venerology, Neurology, Obstetrics and Gynecology, Traumatology and Orthopedics, Psychiatry and Narcology, Biological Physics
Additional requirements	There are no specific requirements
Restrictions	There are no specific restrictions

3. Aims of the course

The purpose of studying the discipline "Occupational Diseases" is to acquire theoretical knowledge and practical skills in public health in the field of occupational pathology; prevention, diagnosis and treatment of occupational diseases necessary for the implementation of professional activities of a specialist in the specialty: "Medicine"

4. Contents

Topic 1 General issues of occupational pathology Introduction of occupational pathology. The history of the occupational diseases. Peculiarities of the diagnosis of the occupational disease. Preliminary and periodical medical check-ups of industrial and agricultural workers.
Topic 2 Ocupational pathology caused by industrial aerosols. Pneumoconioses. Silicosis. Pneumoconioses. Pathophysiology of respiratory diseases caused by dust. Silicosis. Clinical picture. Diagnosis. Treatment. Examination of working ability and prevention.
Topic 3 Silicatosis. Carboconiosis. Metalloconiosis. Silicatosis. Carboconiosis. Metalloconiosis. Clinical picture. Diagnosis. Treatment. Examination of working ability and prevention.
Topic 4 The hypersensitivity pneumonitis. Beriyliosis. Byssinosis. Clinical picture. Diagnosis. Treatment. Examination of working ability and prevention. Occupational bronchial asthma.
Topic 5 Chronic bronchitis and chronic obstructive pulmonary disease caused by dust. Chronic bronchitis and chronic obstructive pulmonary disease caused by dust. Beriyliosis. Byssinosis. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 6 Vibration disease. Vibration disease. Values of vibration parameters for disease development. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 7 Occupational disease caused by occupational noise. Altitude and decompression diseases Sensorineural hearing loss. Caisson disease and decompression disease. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 8 Occupational diseases caused by electromagnetic radiation, ultrasound, and unfavorable factors of industrial microclimate Occupational diseases caused by electromagnetic radiation, ultrasound, and unfavorable factors of industrial microclimate. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 9 Occupational diseases caused by overstraining of separate organs and systems Occupational dyskinesia or coordination neurosis. Diseases of the peripheral nervous system. Diseases of the musculoskeletal system and connective tissue. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 10 Occupational diseases caused by chemical factors with predominant affection of the blood system Occupational intoxication with aromatic hydrocarbons (benzol compounds), with amino- and nitrocompounds of benzol, carbon monoxide. Lead and arsenic hydride intoxication. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.

Topic 11 Occupational diseases caused by cemical factors with predominant affection of the nervous system Manganese intoxication. Mercury intoxication. Tetraethyl lead intoxication.Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 12 Occupational diseases caused by chemical factors with predominant affection of respiratory system Acute and chronic toxic respiratory system affection. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention. Acute toxic pulmonary edema.
Topic 13 Occupational intoxicationas with the chemical pesticides Occupational intoxication with organophosphorus, organochlorine, organomercuric compounds, and others. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 14 Occupational diseases caused by chemical factors with predominant affection of hepato-biliary and urinary system Occupational toxic hepatitis. Occupational toxic nephropathy. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 15 Occupational diseases caused by unfavorable occupational environment factors in persons employed in engineering industry, ore mining, coal mining, and metallurgy Occupational diseases caused by unfavorable occupational environment factors in persons employed in engineering industry, ore mining, coal mining, and metallurgy. Classification. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 16 Occupational diseases caused by unfavorable occupational environment factors in persons employed in manufacture of building materials and agricultural Occupational diseases caused by unfavorable occupational environment factors in persons employed in manufacture of building materials and agricultural. Classification. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 17 Occupational diseases caused by unfavorable occupational environment factors in persons employed in medicine and microbiology Occupational diseases caused by unfavorable occupational environment factors in persons employed in medicine and microbiology. Classification. Clinical picture. Diagnosis. Treatment. Examination of the working ability and prevention.
Topic 18 Final control Final control (differentiated credit)

5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	Apply knowledge of occupational diseases in practical situations.

LO2	Solve complex problems and problems that arise in professional activities. Be able to determine the tactics of management of patients with various pathological conditions in the clinic of occupational diseases. Apply the principles of evidence-based medicine to patients and provide emergency care.
LO3	Determine the list of necessary laboratory and instrumental studies for examining a patient with occupational pathology as well as interpret the obtained results.

7. Teaching and learning activities

7.1 Types of training

Topic 1. General issues of occupational pathology
pr.tr.1 "General issues of occupational pathology" (full-time course) Introduction of occupational pathology. The history of the occupational diseases. Peculiarities of the diagnosis of the occupational disease. Preliminary and periodical medical check-ups of industrial and agricultural workers.
Topic 2. Ocupational pathology caused by industrial aerosols. Pneumoconioses. Silicosis.
pr.tr.2 "Ocupational pathology caused by industrial aerosols. Pneumoconioses. Silicosis." (full-time course) Pneumoconioses. Pathophysiology of respiratory diseases caused by dust. Silicosis. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of working ability and prevention.
Topic 3. Silicatosis. Carboconiosis. Metalloconiosis.
pr.tr.3 "Silicatosis. Carboconiosis. Metalloconiosis." (full-time course) Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of thematic presentations and reports, analysis of clinical cases. Examination of working ability and prevention.
Topic 4. The hypersensitivity pneumonitis.
pr.tr.4 "The hypersensitivity pneumonitis" (full-time course) Beriyliosis. Byssinosis. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of working ability and prevention. Occupational bronchial asthma.
Topic 5. Chronic bronchitis and chronic obstructive pulmonary disease caused by dust.

pr.tr.5 "Chronic bronchitis and chronic obstructive pulmonary disease caused by dust" (full-time course)

Chronic bronchitis and chronic obstructive pulmonary disease caused by dust. Beriyliosis. Byssinosis. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 6. Vibration disease.

pr.tr.6 "Vibration disease" (full-time course)

Vibration disease. Values of vibration parameters for disease development. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 7. Occupational disease caused by occupational noise. Altitude and decompression diseases

pr.tr.7 "Occupational disease caused by occupational noise. Altitude and decompression diseases" (full-time course)

Sensorineural hearing loss. Caisson disease and decompression disease. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 8. Occupational diseases caused by electromagnetic radiation, ultrasound, and unfavorable factors of industrial microclimate

pr.tr.8 "Occupational diseases caused by electromagnetic radiation, ultrasound, and unfavorable factors of industrial microclimate" (full-time course)

Occupational diseases caused by electromagnetic radiation, ultrasound, and unfavorable factors of industrial microclimate. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 9. Occupational diseases caused by overstraining of separate organs and systems

pr.tr.9 "Occupational diseases caused by overstraining of separate organs and systems" (full-time course)

Occupational dyskinesia or coordination neurosis. Diseases of the peripheral nervous system. Diseases of the musculoskeletal system and connective tissue. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports.. Examination of the working ability and prevention.

Topic 10. Occupational diseases caused by chemical factors with predominant affection of the blood system

pr.tr.10 "Occupational diseases caused by chemical factors with predominant affection of the blood system" (full-time course)

Occupational intoxication with aromatic hydrocarbons (benzol compounds), with amino- and nitrocompounds of benzol, carbon monoxide. Lead and arsenic hydride intoxication. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 11. Occupational diseases caused by cemical factors with predominant affection of the nervous system

pr.tr.11 "Occupational diseases caused by cemical factors with predominant affection of the nervous system" (full-time course)

Manganese intoxication. Mercury intoxication. Tetraethyl lead intoxication.Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports.. Examination of the working ability and prevention.

Topic 12. Occupational diseases caused by chemical factors with predominant affection of respiratory system

pr.tr.12 "Occupational diseases caused by chemical factors with predominant affection of respiratory system" (full-time course)

Acute and chronic toxic respiratory system affection. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention. Acute toxic pulmonary edema.

Topic 13. Occupational intoxicationas with the chemical pesticides

pr.tr.13 "Occupational intoxicationas with the chemical pesticides" (full-time course)

Occupational intoxication with organophosphorus, organochlorine, organomercuric compounds, and others. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of thematic presentations and reports, analysis of clinical cases. Examination of the working ability and prevention.

Topic 14. Occupational diseases caused by chemical factors with predominant affection of hepato-biliary and urinary system

pr.tr.14 "Occupational diseases caused by chemical factors with predominant affection of hepato-biliary and urinary system" (full-time course)

Occupational toxic hepatitis. Occupational toxic nephropathy. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 15. Occupational diseases caused by unfavorable occupational environment factors in persons employed in engineering industry, ore mining, coal mining, and metallurgy

pr.tr.15 "Occupational diseases caused by unfavorable occupational environment factors in persons employed in engineering industry, ore mining, coal mining, and metallurgy" (full-time course)

Occupational diseases caused by unfavorable occupational environment factors in persons employed in engineering industry, ore mining, coal mining, and metallurgy.Classification. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of virtual simulation (watching movies) with further discussion; analysis of clinical cases; protection of thematic presentations and reports. Examination of the working ability and prevention.

Topic 16. Occupational diseases caused by unfavorable occupational environment factors in persons employed in manufacture of building materials and agricultural

pr.tr.16 "ccupational diseases caused by unfavorable occupational environment factors in persons employed in manufacture of building materials and agricultural" (full-time course)

ccupational diseases caused by unfavorable occupational environment factors in persons employed in manufacture of building materials and agricultural. Classification. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of thematic presentations and reports. Examination of the working ability and prevention.

Topic 17. Occupational diseases caused by unfavorable occupational environment factors in persons employed in medicine and microbiology

pr.tr.17 "Occupational diseases caused by unfavorable occupational environment factors in persons employed in medicine and microbiology" (full-time course)

Occupational diseases caused by unfavorable occupational environment factors in persons employed in medicine and microbiology. Classification. Clinical picture. Diagnosis. Treatment of diseases from the standpoint of evidence-based medicine. The study of this topic involves the use of thematic presentations and reports, analysis of clinical cases. Examination of the working ability and prevention.

Topic 18. Final control

pr.tr.18 "Final control" (full-time course)

Final control (differentiated credit)

7.2 Learning activities

LA1	Viewing training videos
LA2	Preparation of multimedia presentations
LA3	E-learning in Google Meet, MIX learning systems
LA4	Self-study
LA5	Solving situational tasks
LA6	Preparation for final control
LA7	Work with textbooks and relevant information sources

8. Teaching methods

Course involves learning through:

TM1	Educational discussion
TM2	Case-based learning (CBL)
TM3	Team-based learning (TBL)
TM4	Research-based learning (RBL)
TM5	Think-pair-share
TM6	Demonstration method
TM7	Multimedia lectures

The discipline provides students with the ability to abstract thinking, analysis and synthesis; ability to apply knowledge in practical situations; ability to make informed decisions; ability to learn, master modern knowledge and apply it in practical situations.

According to the requirements of educational program discipline provides students with: GC 1. Ability to abstract thinking, analysis, and synthesis. GC 2. Ability to learn, master modern knowledge, and apply the knowledge in practice. GC 3. Knowledge and understanding of the subject area and professional activity comprehension. GC 4. Ability to adapt and act in a new situation. GC 5. Ability to make reasoned decisions; teamwork ability; interpersonal skills. GC 6. Ability to communicate in a foreign language. GC 7. Ability to use information and communication technologies. GC 8. Determination and persistence on the tasks and commitments undertaken.

9. Methods and criteria for assessment

9.1. Assessment criteria

ECTS	Definition	National scale	Rating scale
	Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
	Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
	Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
	Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

9.2 Formative assessment

FA1	Overall score for the current success of the discipline
FA2	Solving situational tasks
FA3	Teacher's instructions in the process of performing practical tasks
FA4	Solving situational KROK-2 tasks examples
FA5	Checking and evaluating written assignments

9.3 Summative assessment

SA1	The total score of the current performance in the discipline
SA2	Solving a clinical case
SA3	Presentation protection
SA4	Final control: practice-oriented differentiated test (according to the regulations)

Form of assessment:

9 semester		**200 scores**
SA1. The total score of the current performance in the discipline		**100**
	Oral questioning, solving situational tasks	100
SA2. Solving a clinical case		**10**
		10
SA3. Presentation protection		**10**
		10
SA4. Final control: practice-oriented differentiated test (according to the regulations)		**80**
	oral examination	80
10 semester		**200 scores**
SA1. The total score of the current performance in the discipline		**100**
		100
SA2. Solving a clinical case		**10**
		10
SA3. Presentation protection		**10**
		10
SA4. Final control: practice-oriented differentiated test (according to the regulations)		**80**
		80

Form of assessment (special cases):

9 semester		**120 scores**
SA1. The total score of the current performance in the discipline		**100**
	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	100
SA2. Solving a clinical case		**10**
	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	10
SA3. Presentation protection		**10**
	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	10
10 semester		**220 scores**
SA1. The total score of the current performance in the discipline		**120**
	In case of quarantine, practical exercises are held in remotely using the Mix.sumdu.edu.ua platform, Google meet.	120
SA2. Solving a clinical case		**10**
	In case of quarantine restrictions, the protection is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	10
SA3. Presentation protection		**10**
	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	10
SA4. Final control: practice-oriented differentiated test (according to the regulations)		**80**
	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.	80

Grade in the discipline is defined as the sum of points for current educational activities (not less than 72) and points for the final module control (not less than 48). The number of points for the current activity is calculated by the formula 100 x the arithmetic mean of the student's success in the 4-point grading system / 5. The student receives a maximum of 10 points for solving a clinical case. The minimum number of points that a student must receive is 6 points. For the defense of the presentation the student receives a maximum of 10 points, a minimum of 6. The student is admitted to the test subject to the requirements of the curriculum and if for the current educational activity he scored at least 72 points: 60 points during practical classes, 6 points for defense presentations and 6 points for solving a clinical case. The final module control is conducted at the end of the semester in the form of a written test, with a score of "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. In case of unsatisfactory result for the final module control, the student has the right to retake the test. Students who fail to take the test without good reason are considered to have received an unsatisfactory grade. The student's refusal to perform the final modular task is certified as an unsatisfactory answer.

10. Learning resources

10.1 Material and technical support

MTS1	In case of quarantine restrictions, the graiding is carried out on-line using the platform Mix.sumdu.edu.ua, Zoom, Google meet.
MTS2	Software (use of the training platform Mix.sumdu.edu.ua, in special cases of the platforms Google meet, Zoom)
MTS3	Information and communication systems, computers, computer systems and networks, projection equipment
MTS4	Sumy Regional Clinical Hospital, 4th Munitipal Clinical Hospital

10.2 Information and methodical support

Essential Reading	
1	Occupational Diseases [Текст] : textbook / V. A. Kapustnik, I. F. Kostyuk, H. O. Bondarenko etc. ; edit.: V.A. Kapustnik, I.F. Kostyuk. — second edition. — K. : AUS Medicine Publishing, 2018. — 496 p.
2	Goldman-Cecil medicine [Текст]. V.1 / L. Goldman, L. Schafer, M. Crow etc. — 25-th ed. — Saunders: Saunders Elsevier, 2016. — 1489 p.
Supplemental Reading	
2	Occupational Health and safety for healthcare workers [Текст] : study guide / O. P. Yavorovsky, M. I. Veremey, V. I. Zenkina etc. — K. : AUS Medicine Publishing, 2015. — 120 p.
Web-based and electronic resources	
1	Journal of Occupational Medicine and Toxicology https://occup-med.biomedcentral.com/
2	https://academic.oup.com/occmed
3	International Labor Organisation