

# Lviv National Medical University

Named by Danylo Halytsky

*Department of Phthiology and Pulmonology*

“Approved” \_\_\_\_\_

The first vice-rector of scientific-  
pedagogical work

prof. M.R.Gzhegockiy

\_\_\_\_\_ 2018.  
“ \_\_\_\_\_ ” \_\_\_\_\_

## EXECUTABLE CODE OF EDUCATIONAL DISCIPLINE

### PHTHIOLOGY

Speciality - 7.12010005 dentistry

Faculty, course, - dentistry IV

Discussed and accepted  
on meeting of Department  
of phthiology and  
pulmonology  
Protocol №1 from  
28.08.2018

Chief of Department  
Prof. Kostyk O.P.



Ratified a methodical commission of  
therapeutic disciplines

Protocol № « \_\_\_\_\_ » \_\_\_\_\_ in 2018

Head of methodical commission

Prof. Radchenko O.M. \_\_\_\_\_

2018

The program of phthysiology for the higher medical educational establishments of the III-IV accreditation levels is compiled for the specialty "Dentistry" of the direction of training "Medicine" in accordance with the requirements of the educational-qualification characteristics and the educational-professional program of training of specialists.

According to the curriculum, the study of phthysiology is carried out in the fifth semester of the 4th year of study.

Phthysiology as an educational discipline:

- It is based on students' study of anatomy, physiology, histology, microbiology, pathophysiology, pathomorphology, radiology, pharmacology, propaedeutics of internal medicine, propaedeutics of pediatrics, hygiene and ecology and integrates with these disciplines;
- provides for the study of the relationship with the following disciplines: internal medicine, surgery, otolaryngology, neurology, infectious diseases, epidemiology, pediatrics, infectious diseases, oncology and the formation of abilities to apply knowledge in phthysiology in the process of further training and professional activity;
- promotes the promotion and observance of a healthy lifestyle and the prevention of respiratory diseases in the process of life

### **Description of the curriculum in discipline - Phthysiology for students of the Faculty of Dentistry in specialty 7.12010005 "Dentistry"**

<b>Structure educational discipline</b>	<b>Amount of credits, hours, from them</b>			<b>Year of study semester</b>	<b>type of control</b>	
	<b>Total</b>	<b>Audience</b>				<b>CPCs</b>
		<b>Lectures</b>	<b>Practical occupations</b>			
Module: Phthysiology Meaningful <i>modules 4</i>	<b>2 credits</b>  <b>ECTS / 60 год.</b>	<b>10</b>	<b>20</b>	<b>30</b>	4 th year (VIII semester)	<b>credit</b>

Audit load - 50%, CPC - 50%

### **The purpose and tasks of the discipline**

The purpose of the discipline is the acquisition of basic knowledge of phthysiology by students, mastering modern diagnostic methods, differential diagnosis, treatment, tuberculosis prevention, professional skills and practical skills.

Task:

- Identify the risk factors for tuberculosis.
- To interpret the results of bacterioscopic and bacteriological methods of study of sputum.
- Identify the clinical forms of tuberculosis and formulate the clinical diagnosis according to the classification.
- Make a survey scheme for a patient with tuberculosis, analyze the data obtained.

- Appoint standard treatment regimens for patients with respiratory tuberculosis.
- To determine the consequences of treatment of patients with respiratory tuberculosis.
- Diagnose emergency conditions in tuberculosis patients and provide them with emergency assistance.

As a result of studying phthisiology student must know:

- the main epidemiological indicators of tuberculosis;
- morphological structure and properties of the pathogens of tuberculosis;
- pathogenesis of tuberculosis;
- principles of constructing the classification of tuberculosis.
- local and general symptoms of pulmonary tuberculosis;
- X-ray's image of the chest organs in various projections in the norm;
- the notion of "hearth", "infiltration", "cavity", "fibrosis", their X-ray signs
- clinical forms of pulmonary tuberculosis in the X-ray image;
- methods of bacteriological research;
- Types of tuberculin and their features;
- indications and contraindications for the Mantou tuberculin test;
- criteria of negative, positive and hypersensitive tuberculin reaction;
- tuberculosis curve, definition, characteristic;
- post-vaccine and postinfectious reaction to tuberculin;
- indicators of peripheral blood in the normal and inflammatory processes;
- Classification of anti-TB drugs, their properties, dosage, side effects
- general principles of treatment for patients with tuberculosis;
- modern schemes of etiotropic chemotherapy for tuberculosis;
- criteria for the clinical treatment of patients with tuberculosis.
- Types of tuberculosis prevention;
- category of tuberculosis infection centers;
- method of vaccination (revaccination) of BCG;
- complication of vaccination (revaccination) of BCG;
- indications for chemo prophylaxis.
- pathogenesis of primary tuberculosis;
- clinical picture, course, diagnostic methods, differential diagnostics tuberculosis of unidentified localization, primary tuberculosis the complex tuberculosis of intracranial lymph nodes;
- complications of local forms of primary tuberculosis, their clinical signs and diagnostics;
- Principles of treatment of primary tuberculosis.
- pathogenesis of disseminated tuberculosis, tuberculosis of the nervous system and brains
- clinical picture, course, diagnostic methods, complications; differential diagnosis of acute, subacute, chronic disseminated tuberculosis, tuberculosis of the nervous system and the brain;

- Principles of treatment of disseminated pulmonary tuberculosis, tuberculosis the nervous system and the membranes.
- pathogenesis of focal, infiltrative tuberculosis, caseous pneumonia, fibro-cavernous, cirrhotic pulmonary tuberculosis, tuberculous pleurisy;
- clinical picture, course, diagnostic methods, differential diagnostics focal, infiltrative tuberculosis, caseous pneumonia, tuberculomas, fibrous-cavernous, cirrhotic pulmonary tuberculosis, tuberculous pleurisy;
- Principles of treatment of focal, infiltrative tuberculosis, caseous pneumonia, tuberculoma, fibro-cavernous, cirrhotic pulmonary tuberculosis, tuberculous pleurisy;
- pathogenesis of tuberculosis of maxillofacial localization;
- clinical picture, course, diagnostic methods, differential diagnostics tuberculosis of maxillofacial localization;
- pathogenesis of complications of respiratory tuberculosis;
- clinical picture, methods of diagnosis of complications (hemoptysis and hemoptysis) pulmonary hemorrhage, spontaneous pneumothorax);
- features of tuberculosis in HIV-infected and AIDS patients;
- the principles of treatment of tuberculosis in HIV-infected and AIDS patients;
- prevention of tuberculosis in HIV-infected and AIDS patients;
- organization of timely detection of tuberculosis in children and adults;
- category of dispensary registration;

**be able:**

- to analyze the main sections of the clinical classification of tuberculosis;
- to formulate a clinical diagnosis according to the classification of tuberculosis.
- collect complaints of the patient, anamnesis of illness and life;
- to identify persons with an increased risk of TB;
- examine the patient and identify the main symptoms of the disease;
- to carry out palpation, percussion and auscultation of the chest organs; interpret the results obtained;
- To detect and interpret pathological changes on chest radiographs
- cages;
- to evaluate the results of bacteriological study of sputum;
- To conduct and evaluate the Mantoux tuberculin test, based on its results to identify persons who need additional tuberculosis screening;
- to evaluate indicators of general analysis of peripheral blood at different forms and phases of the tuberculosis process;
- interpret the results of the study of cerebrospinal fluid;
- to substantiate the clinical diagnosis according to the classification.
- Appoint treatment to different categories of patients with tuberculosis;
- To diagnose side effects of anti-TB drugs and determine take measures to prevent them.
- to determine indications and contraindications for BCG vaccination and revaccination;
- To select individuals for chemo prophylaxis.
- to provide emergency care to a patient with pulmonary hemorrhage, hemoptysis, spontaneous pneumothorax.
- to perform a mandatory examination complex in case of suspicion of tuberculosis;

- to monitor the groups at increased risk of the disease tuberculosis.

### **Ultimate goals:**

1. Diagnose the clinical forms of tuberculosis and formulate the clinical diagnosis according to the classification.
2. Determine the risk factors for tuberculosis.
3. Apply the basic principles of treatment for patients with tuberculosis and determine the criteria for their treatment.
4. To use the principles of clinical examination of persons from the risk group of tuberculosis and the principles of tuberculosis prevention.
5. Diagnose and provide emergency care for emergency conditions in patients with tuberculosis.

### **The curriculum program**

#### ***Semantic module 1. General issues of phthisiology. Method of examination of a patient with tuberculosis***

#### ***Specific goals:***

- To determine the risk factors for TB.
- To analyze the main epidemiological indicators of the prevalence of tuberculosis (infection, morbidity, mortality).
- To describe the features of the pathogens of tuberculosis.
- Identify ways to infect tuberculosis.
- To determine the categories of people at high risk of TB.
- Identify clinical signs of tuberculosis.
- To determine the role of bacterioscopic and bacteriological methods of sputum research.
- To analyze the main X-ray syndromes in the tuberculosis clinic.
- To determine the algorithm of the actions of the doctors of the institutions of the general medical network regarding the detection of tuberculosis in the treatment of patients with the help.
- Explain the goals of tuberculin diagnosis.
- Analyze the results of the Mantoux test with 2 TPD-L tests.
- To explain the concept of "turning" of a tuberculin test and its importance for early diagnosis of tuberculosis.

#### ***Theme1. Definition of tuberculosis as a disease. Tuberculosis epidemiology. The pathogens of tuberculosis, its properties. Ways of infecting tuberculosis.***

Definition of tuberculosis as a disease. Risk Factors for TB.

The main epidemiological parameters (infection, morbidity, morbidity, mortality) and their dynamics over the last 10-15 years. The spread of tuberculosis in countries with different levels of economic development.

Risk Factors for TB. Tuberculosis pathomorphosis.

Tobacco pathogen, morphological structure, properties. Types of mycobacterium tuberculosis (MBT) and their epidemiological significance. Variability of the MBT (L-shaped, filtering forms, persistence, reversal). Chemo-resistant MBT and their

clinical significance. Atypical mycobacteria. The stability of the Office in the environment. Sources of tuberculosis infection. Allocation of mycobacteria into the environment. Ways to Infect Tuberculosis.

***Theme 2. Features of clinical examination of a patient with tuberculosis.***

***X-ray diagnosis of tuberculosis. Methods of X-ray examination in the clinic of phthisiology. X-ray tuberculosis syndromes.***

Ways and methods for detecting tuberculosis. Categories of people at high risk for TB.

Features of clinical examination of a patient with tuberculosis: complaints, medical history, course, epidemiological history, diseases, conditions of work and life; physical examination methods: the significance of palpation, percussion and auscultation in the examination of a patient with tuberculosis; diagnostic value of changes in the general blood test in patients with pulmonary tuberculosis. Methods of X-ray examination of the respiratory and respiratory tuberculosis patient (X-ray, tomography, and fluorography, computed tomography, X-ray). X-ray syndromes: lung root damage, dissemination, infiltration, circular shadow, cavity, fibrosis. Clinical forms of pulmonary tuberculosis in the X-ray image. Population groups ("decreed" contingents) that are subject to a mandatory annual fluorographic survey.

Content module 3. Treatment and prevention of tuberculosis.

Specific goals:

- To treat the basic principles of treating patients with tuberculosis.
- Formulate standard regimens of antimycobacterial therapy depending on the category of treatment.
- Diagnose side-effects of anti-TB drugs and identify methods for preventing them.
- Determine the criteria for the treatment of patients with tuberculosis.
- Determine indications and contraindications for BCG vaccination and revaccination.
- Diagnose the complications of BCG vaccination (revaccination).
- Determine the symptoms before chemo prophylaxis.
- Determine the epidemiological risk of tuberculosis infections.
- To apply a set of preventive measures in the centers of tuberculosis infection.

**Theme 3. Microbiological diagnosis of tuberculosis. Tuberculin diagnostics.**

Microbiological diagnostics: methods of bacterioscopic, bacteriological and biological detection of MBT, the significance of their results for the diagnosis of tuberculosis. Accelerated methods of detection of the MBT: VASTEK, enzyme-linked immunosorbent assay, polymerase chain reaction (PCR). Determination of the sensitivity of MBT to anti-TB drugs.

The purpose of tuberculin diagnostics. The notion of tuberculin. Mantoux test with 2 TP PP-L: testimony, technique, evaluation of its results. The notion of "turning" tuberculin test. Differential diagnosis after vaccine and infectious immunity.

**Theme 4. General principles of treatment of a patient with tuberculosis. Antimycobacterial drugs. Standard regimens for treatment of patients with active tuberculosis. Chemoresistant TB**

General principles of antimycobacterial therapy: complexity, combination, controllability, two-phase treatment, duration and continuity, individual approach, stage sequence, free of charge. Anti-TB drugs: classification, dosages, methods and multiplicity of administration in the patient's body. The action of anti-TB drugs. Adverse reactions to antimycobacterial drugs, their prevention and methods of elimination. Categories of treatment for patients with tuberculosis. Standard regimens for treatment of patients with active tuberculosis. Chemo-resistant tuberculosis: clinical manifestations and treatment of a patient with tuberculosis with drug resistance  
Criteria for the treatment of a patient with tuberculosis.

**Theme 5. Nonspecific therapy for patients with tuberculosis (hygiene and dietary regime, pathogenetic, symptomatic treatment). Surgical treatment. Sanatorium and spa treatment. Cure for patients.**

Hygiene and diet regime in the clinic of tuberculosis. Pathogenetic treatment in the intensive phase (anti-inflammatory, detoxification therapy, elimination of side effects of antimycobacterial drugs) and in the supporting phase (general strengthening therapy). Immunocorrection therapy. Symptomatic treatment, physiotherapy.  
Basic surgical methods of treatment for tuberculosis of the respiratory organs (operations on the lungs, operations on the pleura). Impressions, contraindications. Sanatorium and resort treatment for patients with tuberculosis.  
Expertise of working capacity.

**Theme 6. Prevention of tuberculosis. Social prevention.**

**Infectious disease control. Components of infection control: administrative control, control of the air condition of indoor premises, individual protection of respiratory organs.**

Sanitary prophylaxis, its task. Concept about the center of tuberculous infection. Categories of cells according to the degree of epidemiological danger, criteria for its determination. Work in the cell of tuberculosis infection in the prevention of tuberculosis.  
BCG and BCG-M vaccination, BCG vaccination. BCG and BCG-M vaccine vaccination and revaccination technique. Impressions and contraindications for BCG vaccination and revaccination. Assessment of local reactions of the body to the introduction of the vaccine. Complications of TB vaccinations.  
Chemoprophylaxis of tuberculosis: indications, methods of conducting.

**Semantic module 3. Clinical classification of tuberculosis. Primary forms of tuberculosis. Complications of primary forms of tuberculosis**  
**Specific goals:**

- Analyze the main sections of the clinical classification of tuberculosis and formulate the clinical diagnosis according to the classification.
- To establish a diagnosis of primary forms of tuberculosis based on anamnestic, clinical-radiological, and laboratory data.
- Diagnose the complications of primary forms of tuberculosis.

### **Theme 7. Clinical classification of tuberculosis.**

Principles of construction of classification of tuberculosis. Classification categories: the type of tuberculosis process, the main clinical forms, the characteristics of the tuberculosis process and its complications, the clinical and dispensary categories of patient records, the effectiveness of treatment for patients with tuberculosis, the effects of tuberculosis. Formulation of the diagnosis of tuberculosis according to the classification.

### **Theme 8. Tuberculosis of unidentified localization. Tuberculosis of the intramuscular lymph nodes. Primary tuberculosis complex. Complications of primary forms of tuberculosis.**

Morphological basis of tuberculosis of unidentified localization. Clinical manifestations, course. Treatment.

Classification of intracranial lymph nodes. Clinical and X-ray forms of tuberculous bronchoadenitis: infiltrative, tumorous, "small". Pathogenesis, pathomorphology, clinic, course. Treatment. Consequences.

Pathogenesis and pathomorphology of the primary tuberculosis complex. Clinical manifestations, course, diagnostics. Differential diagnosis with nonspecific pneumonia. Treatment. Consequences.

Residual changes after transmitted local forms of primary tuberculosis and their significance for the emergence of secondary forms of tuberculosis.

Complications of tuberculosis of intra-chest lymph nodes and primary tuberculosis complex (atelectasis, specific bronchial lesion, bronchodulatory fistula, hematogenous or lymphatic hematogenous dissemination, pleurisy, decay and formation of the primary cavity), diagnosis, treatment.

### **Semantic module 4. Secondary forms of tuberculosis (pulmonary and non-pulmonary). Complications of secondary forms of tuberculosis. Tuberculosis of the lungs in combination with other diseases.**

#### **Specific goals:**

- Diagnose secondary forms of tuberculosis based on anamnestic, clinical-radiological, and laboratory data.
- To formulate the clinical diagnosis of secondary forms according to the classification.
- To appoint a comprehensive therapy for patients with secondary forms of tuberculosis.
- Diagnose the complications of secondary forms of tuberculosis.
- Provide emergency care at urgent conditions in patients with tuberculosis.
- To analyze the peculiarities of the course and treatment of patients with pulmonary tuberculosis associated with HIV infection.



- Appoint a patient survey plan for the diagnosis of tuberculosis of the mucous membranes of the oral cavity and maxillo-facial bones.

### **Theme 9. Disseminated pulmonary tuberculosis. Miliary tuberculosis.**

#### **Tuberculosis of the nervous system and the mucous membranes**

Pathogenesis and pathomorphology of disseminated pulmonary tuberculosis. Clinical variants of the course (acute, subacute, chronic) and their radiological signs. Clinic, diagnostics. Treatment. Consequences.

Pathogenesis and pathomorphology of miliary tuberculosis. Clinical options. Diagnosis. Treatment. Consequences.

Pathogenesis and pathomorphology of the tuberculosis of the nervous system and the cerebral membranes. Clinic. Features of diagnosis and course of tuberculous meningitis. Spinal cord puncture and interpretation of the results of the study of cerebrospinal fluid. Treatment. Consequences. Forecast.

### **Theme 10. Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia.**

#### **Tuberculoma of the lungs. Fibrous- cavernous and cirrhotic pulmonary tuberculosis. Tuberculous pleurisy.**

Pathogenesis, pathomorphology, clinic and the course of focal and infiltrative forms of tuberculosis. Causes of the progression of focal, infiltrative tuberculosis. Clinical and X-ray variants of infiltrates.

Causes of caseous pneumonia, peculiarities of its course. Treatment. Consequences.

Classification of pulmonary tuberculosis. Peculiarities of the course. Treatment. Consequences.

Causes of fibrous-cavernous tuberculosis of the lungs. The main clinical syndromes, radiological signs of fibro-cavernous and cirrhotic pulmonary tuberculosis. Treatment. Consequences.

Tuberculous pleurisy. Pathogenesis, pathomorphology, clinic, diagnosis, treatment, consequences. Indications for pleural puncture, method of its conduct. Consequences.

### **Topic 11. Tuberculosis of the maxillofacial localization: clinic, diagnostics, features of treatment of patients with tuberculosis of the mucous membranes of the oral cavity and maxillo-facial bones.**

Diagnosis and treatment of complications of tuberculosis that require urgent medical assistance: pulmonary haemorrhage, spontaneous pneumothorax.

Pathogenesis, pathomorphology and classification of tuberculosis of the mucous membranes of the oral cavity and maxillo-facial bones. Basic clinical manifestations. Treatment. Consequences.

Pathogenesis, clinic, diagnostics and principles of treatment of hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax. Emergency delivery with pulmonary hemorrhage, spontaneous pneumothorax.

### **Theme 13. Tuberculosis in patients with HIV infection. Tuberculosis and pregnancy. Causes of tuberculosis development in patients with HIV infection. Epidemiology. Clinical picture.**

Diagnosis of tuberculosis in HIV-infected; diagnosis of HIV infection in patients with tuberculosis. Treatment of tuberculosis in patients with HIV infection. Prevention of tuberculosis in HIV-infected individuals. Tuberculosis in conjunction with pregnancy.

**Theme 12. Tuberculosis of peripheral lymph nodes. Tuberculosis bones and joints. Clinic, diagnostics, treatment.**

Pathogenesis, pathomorphology, local and general manifestations, clinical forms of tuberculosis of peripheral lymph nodes. Diagnosis. Treatment. Clinic for tuberculosis of bones and joints. Diagnosis. Treatment.

**Theme 13. Tuberculosis in patients with HIV infection. Tuberculosis and pregnancy.**

Causes of tuberculosis development in patients with HIV infection. Epidemiology. Clinical picture. Diagnosis of tuberculosis in HIV-infected; diagnosis of HIV infection in patients with tuberculosis. Treatment of tuberculosis in patients with HIV infection. Prevention of tuberculosis in HIV-infected individuals. Tuberculosis in conjunction with pregnancy.

**Structure of the discipline**

Topics	Lectures	Practical Lessons	CPC
<b>Content module1 . General issues of phthisiology</b>			
Theme 1. Definition of tuberculosis as a scientific and practical problem. History of phthisiology. Epidemiology of tuberculosis. Etiology, pathogenesis, tuberculosis. Immunity in tuberculosis. Clinical classification of tuberculosis.	2	4	8
Together with content module 1	2	4	8
<b>Content module 2. The method of examination of a patient with tuberculosis.</b>			
Theme 2. Organization of revealing and diagnosis of tuberculosis. Special methods of revealing and diagnosis of tuberculosis (bacteriologic examination, chest radiography,	2	4	5

tuberculin skin test).			
Together with content module 2	2	4	5
<b>Content module 3. Treatment and prevention of tuberculosis.</b>			
Theme 3. General principles of treatment for patients with tuberculosis. Antimycobacterial drugs. Standard treatment regimens for patients with tuberculosis.	1	4	4
Theme 4. Nonspecific therapy for patients with tuberculosis (hygiene and dietary regime, pathogenetic, symptomatic treatment). Surgical treatment. Sanatorium and spa treatment.	-	-	4
Topic 5. Tuberculosis prevention.	1	4	-
Together with content module 3	2	8	8
<b>Content module 4. Primary forms of tuberculosis. Complications of primary tuberculosis</b>			
Theme 6. Tuberculosis of unidentified localization. Tuberculosis of intracranial lymph nodes. Primary tuberculosis complex. Pathogenesis, pathomorphology, clinic, diagnostics, differential diagnosis, treatment, consequences. Complications of primary forms of tuberculosis.	0,5	4	-
Total content module 4	0,5	4	-
<b>Content module 5. Secondary forms of tuberculosis. Complications of secondary tuberculosis. Tuberculosis of the lungs in combination with other diseases.</b>			
Theme 7. Disseminated pulmonary tuberculosis. Miliary tuberculosis. Tuberculosis of the nervous system and the membranes. Pathogenesis, pathomorphology, clinic, diagnostics, differential diagnosis, treatment, consequences.	0,5	4	4
Theme 8. Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibroscopic cavernosum and cirrhotic pulmonary tuberculosis. Pathogenesis, pathomorphology, clinic, diagnostics, differential diagnosis, treatment, consequences.	0,5	4	8
Theme 9. Tuberculous pleurisy (including empyema). Pathogenesis, pathomorphology, clinic, diagnostics, differential diagnosis, treatment, consequences. Complications of secondary forms of tuberculosis: hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart, amyloidosis of the internal organs.	0,5	4	-
Theme 10. Tuberculosis of peripheral lymph nodes. Tuberculosis of bones and joints. Clinic, diagnostics, treatment.	-	-	4

Theme 11. Tuberculosis of the lungs, combined with professional dust diseases. Tuberculosis in patients with HIV / AIDS. Clinic, diagnostics, features of the course and treatment.	-	-	13
Total content module 5	1,5	12	29
Total hours - 90/3 credits ECTS	8	32	50
<b>Final control</b>	<b>exam</b>		

Audit work - 44,4%, CPC - 55,6%.

### Thematic plan of discipline lectures - Phthisiology

№	TOPIC	number of hours
1.	Determination of tuberculosis as a scientific and practical problems. History of phthisiology. Epidemiology of tuberculosis. Pathogenesis of tuberculosis. Immunity in tuberculosis.	2
2.	Diagnosis of tuberculosis. Special methods of detection and diagnosis of tuberculosis.	2
3.	General principles and methods of treatment for patients with tuberculosis. Tuberculosis prevention	2
4.	Clinical classification of tuberculosis. Clinical forms of primary tuberculosis.	2
5.	Clinical forms of secondary tuberculosis. Tuberculosis of the mucous membranes of the oral cavity and maxillo-facial bones	2
	<b>Together:</b>	10

## Thematic plan of practical classes

№	TOPIC	number of hours
1.	Definition of tuberculosis as a disease. Epidemiology of tuberculosis. The main epidemiological indicators of the prevalence of tuberculosis. The pathogens of tuberculosis, its properties. Ways to Infect Tuberculosis.	2
2.	Features of a clinical examination of a patient with tuberculosis. X-ray diagnosis of tuberculosis. Methods of X-ray examination in the clinic of phthisiology.  X-ray tuberculosis syndromes.	2
3.	Microbiological diagnosis of tuberculosis. Tuberculin diagnostics.	2
4.	General principles of treatment for patients with tuberculosis. Antibacterial drugs. Standard treatment regimens for patients with active tuberculosis. Chemo-resistant tuberculosis.	2
5.	Tuberculosis prevention.	2
6.	Clinical classification of tuberculosis.	2
7.	Tuberculosis of unidentified localization. Tuberculosis of intracranial lymph nodes. Primary tuberculosis complex. Complications of primary forms of tuberculosis.	2
8.	Disseminated pulmonary tuberculosis. Miliary tuberculosis. Tuberculosis of the nervous system and the membranes.	2
9.	Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia. Fibroscopic cavernosum and cirrhotic pulmonary tuberculosis. Tuberculous pleurisy (including empyema).	2
10	Tuberculosis of maxillofacial localization: clinic, diagnostics, features of treatment of patients with tuberculosis of the mucous membranes of the oral cavity and jaw-facial bones. Diagnosis and treatment of tuberculosis complications requiring urgent medical attention: pulmonary haemorrhage, spontaneous pneumothorax.	2
	<b>Together:</b>	20 год

## Independent work

№	Theme of independent work	number of hours	type of control
1.	The pathogens of tuberculosis, its types and forms of existence. The concept of the persistence and reversion of mycobacterium tuberculosis. Chemo-resistant MBT and their clinical significance.	3	Current control on practical classes
2.	The main epidemiological indicators of tuberculosis and their evaluation.	3	
3.	The concept of timely, late and late detection of tuberculosis. Decreased contingents of the population. Groups at high risk of TB.	3	
4.	Nonspecific therapy in the treatment of patients with tuberculosis. Sanatorium and spa treatment.	3	
5.	Surgical methods for treatment of tuberculosis.	3	
6.	Tuberculoma of the lungs. Clinic, diagnostics, treatment.	3	
7.	Tuberculosis of peripheral lymph nodes. Tuberculosis of bones and joints. Clinic, diagnostics, treatment.	3	
8.	Tuberculosis and pregnancy.	3	
9.	Tuberculosis in patients with HIV / AIDS. Clinic, diagnostics, features of the course and treatment.	3	
10.	Categories and groups of dispensary observation of patients with tuberculosis.	3	
	<b>Together:</b>	30	

### Methods of training

Verbal - explanation, briefing, educational discussion.

Visual - Illustration (tables, X-rays, results of analyzes and other survey methods);

- Demonstration (diagnostic and therapeutic manipulations).

Practical - the formation of skills and abilities of clinical examination of patients, the implementation of the prescribed medical manipulation program, emergency assistance.

Interactive - which involves working in small groups to perform a specific set of tasks; simulation of clinical situations.

## Methods of control

The control is carried out by a comprehensive assessment of the theoretical and practical training of the student on the basis of oral questioning, test control, the solution of clinical situational tasks, demonstration of practical skills and abilities.

### Criteria for evaluation

<b><u>Assessment of the student's oral response</u></b>			
«Perfect»	«Good»	«Satisfactorily»	«Unsatisfactorily»
The student profoundly and firmly mastered the material; consistently, competently and logically teaches him, closely relates theory with practice, freely copes with issues.	A student knows the material competently and substantially compliant and does not allow material mistakes in answering questions.	The student has knowledge of the main material, but did not learn its details, makes mistakes, violates the sequence in the presentation of the material.	The student does not know part of the software, allows for significant errors, is not sure of the answer.
<b><u>Assessment of the solution of test tasks</u></b>			
«Perfect»	«Good»	«Satisfactorily»	«Unsatisfactorily»
100-91%	90-76%	75-51%	50 i less%
<b><u>Assessment of the solution of a clinical situational problem</u></b>			
«Perfect»	«Good»	«Satisfactorily»	«Unsatisfactorily»
Precisely formulated and fully substantiated clinical diagnosis in the patient and put on a treatment plan.	A precisely formulated and partly substantiated clinical diagnosis of the patient, inaccuracies in the preparation of the treatment plan have been made.	There were difficulties in substantiating the clinical diagnosis, drawing up a patient's treatment plan.	No answer to the task is given.

<b><u>Assessment of the demonstration of practical skills</u></b>			
«Perfect»	«Good»	«Satisfactorily»	«Unsatisfactorily»
The student has mastered the	The student performs practical	The student made serious mistakes in	The student did not develop practical

practical skills provided by the program.	skills, but does not assume fundamental errors.	the implementation of practical skills.	skills; did not develop the skills provided by the program.
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### Distribution of points received by students

**Types of control** - current and final.

**The form of final control in accordance with the curriculum** is an exam

**Current control** is carried out during the training sessions and is aimed at verifying students' learning of the material.

***Estimation of the current educational activity*** When assessing the mastering of each topic in the course of the current educational activity, the student is assessed on a 4-point (traditional) scale, taking into account the criteria for assessing the discipline. It takes into account all types of works provided for by the curriculum. A student receives an assessment from each topic. Forms of assessment of the current academic activity are standardized and include the control of theoretical and practical training. Shown on a traditional scale of evaluation are converted to points.

**The maximum number of points** a student can score for the current semester entrance exam for the entrance exam is 120 points. **The minimum number of points** that a student must score for the current study activity per semester for admission to the exam is 72 points.

**The calculation of the number of points** is based on the student's assessment of the traditional scale during the study of discipline, by calculating the average arithmetic (CA), rounded to two decimal places. The resulting value is converted to a score on a multi-scale scale in the following way:

### Recalculation of the average for the current activity in the multi-point scale for the disciplines ending with the exam.

4-score scale	200-score scale
5	120
4.95	119
4.91	118
4.87	117
4.83	116
4.79	115
4.75	114

4-score scale	200-score scale
4.45	107
4.41	106
4.37	105
4.33	104
4.29	103
4.25	102
4.2	101

4-score scale	200-score scale
3.91	94
3.87	93
3.83	92
3.79	91
3.74	90
3.7	89
3.66	88

4-score scale	200-score scale
3.37	81
3.33	80
3.29	79
3.25	78
3.2	77
3.16	76
3.12	75



4.7	113		4.16	100		3.62	87		3.08	74
4.66	112		4.12	99		3.58	86		3.04	73
4.62	111		4.08	98		3.54	85		3	72
4.58	110		4.04	97		3.49	84		Less than 3	Not enough
4.54	109		3.99	96		3.45	83			
4.5	108		3.95	95		3.41	82			

Independent work of students is assessed during the current control of the topic in the relevant class. Assimilation of those that are imposed only on independent work is controlled by the final control.

**The final control** is conducted to evaluate the results of the training at a certain educational-qualifying level and at individual completed stages according to the national scale and the ECTS scale.

Semester control is carried out in the form of a semester exam on the discipline of Phthisiology in the amount of study material determined by the work program of academic discipline and in terms set by the work curriculum, individual curriculum of the student.

**The semester exam** is a form of final control of the student's acquisition of theoretical and practical material from a separate discipline for a semester, which is conducted as a control measure. A student is admitted to the semester examination on discipline, if he has attended all classroom training sessions provided by the curriculum, fulfilled all types of work envisaged by the work program of this discipline and during his study during the semester he scored the number of points not less than the minimum (72 points)

The semester exam is conducted in writing during the exam session, according to the schedule. The form of the exam is standardized and includes the control of theoretical and practical training.

**The maximum number of points** a student can score for an exam is 80.

**The minimum number of points** during the examination - not less than 50.

A set of tasks for the semester exam contains 25 test tasks, 2 theoretical questions, 2 clinical situational tasks, description and interpretation of radiographs.

**Table of assessment of semester exam**

Test control	Theoretical issues	Clinical situational tasks	Description and interpretation of X-rays
The correct solution to the test task is 1 point (maximum	«perfect» 10 points	«perfect» 10 points	«perfect» 15 points
	«good» 8 points	«good» 8 points	«good» 12 points
	«satisfactorily» 7 points	«satisfactorily» 7 points	«satisfactorily» 9 points

score is 25)	«unsatisfactorily» 0 points	«unsatisfactorily» 0 points	«unsatisfactorily» 0 points
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### **Determination of the number of points the student got from the discipline**

An assessment from the discipline that completes the exam is defined as the sum of points for the current educational activity (not less than 72) and the marks for the exam (not less than 50).

Disciplines are independently converted into both the ECTS and 4-point scale. The ECTS scores on the 4-point scale are not converted and vice versa.

Points of students studying in one specialty, taking into account the number of points scored from the discipline, are ranked on the ECTS scale as follows:

<b>Assessment of ECTS</b>	<b>The statistical indicator</b>
<b>A</b>	<b>The best 10% of students</b>
<b>B</b>	<b>The next 25% of students</b>
<b>C</b>	<b>The next 30% of students</b>
<b>D</b>	<b>The next 25% of students</b>
<b>E</b>	<b>The last 10% of students</b>

Score points for students who have successfully completed the program are converted to the traditional 4-point scale by the absolute criteria listed in the table below:

<b>Score points</b>	<b>Score on the 4- score</b>
From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimum number of points a student should	3
Below is the minimum number of points that the student should	2

The ECTS mark on a traditional scale is not converted because the ECTS scale and the four-point scale are independent.

Objectivity of assessment of students' educational activity is checked by statistical methods (correlation coefficient between ECTS assessment and national scale assessment).

## **Methodical support**

Methodical developments of practical classes, test tasks, clinical situational tasks, orientational maps for the organization of independent work of students.

### **List of questions to be put on the final control.**

#### ***Semantic module 1. General issues of phthisiology. Method of examination of a patient with tuberculosis***

1. The value of the works of Hippocrates, Avicenna, R. Laenneka, R. Koch in the study of tuberculosis.
2. The role of MI Pirogov, Kalmetta and Guerin, F. G. Yanovsky in the development of the doctrine of tuberculosis.
3. The role of Z. Waxman, MS Pilipchuk, O. S. Mamolat in the development of the doctrine of tuberculosis.
4. The main epidemiological indicators of the prevalence of tuberculosis and their evaluation.
5. The pathogens of tuberculosis, its types and forms of existence (L-forms), properties. The concept of persistence and reversion of mycobacterium tuberculosis.
6. Tuberculosis pathomorphosis.
7. Sources of tuberculosis infection. Allocation of mycobacteria into the environment.
8. Ways of infection and distribution of mycobacteria in the human body.
9. Tuberculosis pathogenesis.
10. Immunity in tuberculosis.
11. Methods and ways of detecting tuberculosis.
12. Algorithm of actions of doctors of establishments of the general medical network on detection of tuberculosis at the referral of patients with the help.
13. A group of high-risk tuberculosis patients.
14. The main complaints of patients with tuberculosis.
15. Methods of laboratory detection of mycobacterium tuberculosis.
16. Methods of X-ray examination of patients with respiratory tuberculosis.
17. "Compulsory" contingents of the population who are subject to a preventive examination once a year.
18. Tuberculin diagnostics. Objectives of tuberculin diagnostics. Mantoux test with 2 TPP-L and evaluation of its results. "Tumor" tuberculin test.
19. Differential diagnostics of postvaccine (BCG) and infectious immunity in children and adolescents.

#### ***Content module 2. Treatment and prevention of tuberculosis.***

20. Basic principles and methods of treatment for patients with pulmonary tuberculosis.
21. Categories of treatment for patients with pulmonary tuberculosis.
22. Standard chemotherapy regimens.
23. Drug resistance, its species.
24. Treatment of patients with chemo-resistant tuberculosis.
25. Criteria for the treatment of patients with tuberculosis.
26. Residual changes and their significance for the occurrence of tuberculosis relapse.

27. Tuberculosis prevention: social, infectious disease control.
28. Tuberculosis prevention: sanitary.
29. Cells of TB infection, their classification. Current and final disinfection.
30. Criteria for determining the epidemiological risk of tuberculosis infection centers.
31. Primary prophylaxis (vaccination of BCG and BCG-M, BCG vaccination). Methodology and technique of vaccination. Evaluate the results.
32. Complications of BCG vaccination (revaccination).
33. Secondary prophylaxis (chemoprophylaxis) of tuberculosis.

***Semantic module 3. Clinical classification of tuberculosis. Primary forms of tuberculosis. Complications of primary tuberculosis.***

34. Clinical classification of tuberculosis (its sections).
35. Tuberculosis of unidentified localization. Pathogenesis, clinic, diagnostics, treatment.
36. Primary tuberculosis complex. Pathogenesis, clinic, diagnosis, treatment, consequences.
37. Tuberculosis of intracranial lymph nodes. Pathogenesis, clinic, diagnosis, treatment, consequences.
38. Complications of primary forms of tuberculosis.

***Semantic module 4. Secondary forms of tuberculosis (pulmonary and extrapulmonary). Complications of secondary forms of tuberculosis. Tuberculosis of the lungs in combination with other diseases.***

39. Military tuberculosis. Pathogenesis, clinic, diagnosis, treatment, consequences.
40. Tuberculosis of the nervous system and the membranes. Pathogenesis, clinic, diagnostics, differential diagnosis, treatment, consequences.
41. Focal lung tuberculosis. Pathogenesis, clinic, diagnosis, treatment, consequences.
42. Infiltrative pulmonary tuberculosis. Clinical and X-ray variants of infiltrates. Pathogenesis, clinic, diagnostics, differential diagnosis, treatment, consequences.
43. Caseous pneumonia. Pathogenesis, clinic, diagnosis, treatment, consequences.
44. Fibro-cavernous disseminated pulmonary tuberculosis. Pathogenesis, clinic, diagnosis, treatment, consequences.
45. tuberculosis of the lungs. Causes, pathogenesis, clinic, diagnosis, treatment, consequences.
46. Cirrhotic pulmonary tuberculosis. Pathogenesis, clinic, diagnosis, treatment, consequences.
47. Tuberculous pleurisy (including empyema). Pathogenesis, clinic, diagnosis, treatment, consequences.
48. Complications of tuberculosis: hemoptysis, pulmonary haemorrhage. Pathogenesis, clinic, diagnostics, treatment, emergency care.
49. Complications of tuberculosis: spontaneous pneumothorax. Causes, Clinic, Diagnosis, Emergency.
50. Causes of tuberculosis in HIV-infected people.
51. Diagnosis of tuberculosis in HIV-infected people.
52. Treatment and prevention of tuberculosis in HIV-infected.
53. Categories of clinical examination of patients with tuberculosis.

## Recommended Books

### Basic literature:

1. Phthysiology. nats textbook / edited by V. I. Petrenko,. - Kyiv .: VVV "Medicine", 2015. - 472 p.
2. Infectious diseases with the basics of phthisiopulmonology. Training manual / Il'nitsky I. G., Chornovil AV, Gritsko R. Yu., Kostik O. P., Sichkoriz O. Ye., Rudnitskaya H. I.- Lviv, 2009.- 404 p.
3. Phthysiology. Educational manual / edited by V.P. Melnik, I.G.Ilnitsky. - Kyiv - Lviv: Atlas, 2008. - 304s.
4. Phthysiology. Textbook / Ed. acad. AND I. Tsyganenko, prof. SI. Zaitseva - X .: Fakty, 2004. 390s.
5. Savula MM, Ladny O.Ya. Tuberculosis. Textbook. Ternopil: "UkrmedkNiga", 1999. - 323 p.
6. Unified clinical protocol of primary, secondary (specialized) and tertiary (highly specialized) medical care to adults. Tuberculosis, Order of the Ministry of Health of Ukraine 04.09.2014 № 620.

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### Information resources

1. State institution "Ukrainian Center for the control of social diseases of the Ministry of Health of Ukraine": <http://ucdc.gov.ua>
2. The site of the National Institute of Phthisiology and Pulmonology named after FG Yanovsky: <http://www.ifp.kiev.ua/doc>
3. Tuberculosis, pulmonary diseases, HIV infection. Ukrainian Scientific and Practical Journal [www.tubvil.com.ua](http://www.tubvil.com.ua)
4. USAID "Strengthening TB Control in Ukraine" Website: <http://www.stbcu.com.ua>