

# Lviv National Medical University

Named by Danylo Halytsky  
Department of Phthysiology and Pulmonology

“Approved” \_\_\_\_\_

The first pro-rector of scientific-  
pedagogical work  
prof. M.R.Gzhegochkiy

\_\_\_\_\_ 2018.  
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## EXECUTABLE CODE OF EDUCATIONAL DISCIPLINE

### PHTHYSIOLOGY

Speciality - 7.12010001 medical practice  
7.12010002 paediatrics  
7.12010003 mediko-profilaktichna practice

Faculty, course, - medical, IV

Discussed and accepted  
on meeting of Department  
of phthysiology and  
pulmonology  
Protocol №1 from  
31.08.2018  
Chief of Department  
Prof. Kostik O.P.



Ratified a methodical commission of  
therapeutic disciplines  
Protocol № «1» 06.09 in 2018

Head of methodical commission  
Prof. Radchenko O.M.

2018

Program from a phthiology for higher medical establishments of formation of III- IV levels of accreditation" Medical practice  
 " "Paediatrics" made for specialities, "Medikal profilakticpractice" straight preparations "Medicine" according to the requirements of educationally-qualifying description and educationally-professional program of preparation of specialists.

The study of phthiology comes true in VII or VIII semester of 4th of studies.

Phthiology as educational discipline :

is base on study of anatomy, physiology, histology, microbiology, physiopathology, pathomorphology, radio-therapy, pharmacology, students,

propedevtics of internal medicine, пропедевтики of paediatrics, hygiene and ecology and integrated with these disciplines;

envisages at a study intercommunication with next disciplines: internal medicine , surgery, otolaryngology, neurology, infectious diseases, epidemiology, paediatrics, child's infections, oncology and forming of abilities to apply knowledge from a phthiology in the process of further studies and in professional activity;

assists propaganda and observance of healthy way of life and prophylaxis of diseases of breathing organs in a process

Description of curriculum from discipline of Phthiology  
for the students of medical faculties  
after speciality

7.12010001 medical practice

7.12010002 paediatrics

7.12010003 medical profilactic practice

Qualification for a doctor

Structure of educational disciplines	Amount of credits, hours, from them			A year of studies , semester	Type of control	
	All	Аудиторних				CPC
		Lectures	Practical clases			
Module: Phthiology Semantic modules 5	3 loans  <b>ECTS/ 90 hours</b>	<b>8</b>	<b>32</b>	<b>50</b>	<b>4</b> course <b>(VII or VIII</b> semesters exam	

Auditory load - 44,4%, CPC - 55,6%

## Aim and task of educational discipline

The purpose of the discipline is the acquisition of basic knowledge of physiology 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.
- Carry out dispensary supervision of persons who became sick with tuberculosis, contact, for the first time infected with tuberculosis infection and non-vaccinated BCG vaccine in the maternity hospital (children's contingent).
- Demonstrate the ability to maintain medical records used in physiology.
- Diagnose emergency conditions in tuberculosis patients and provide them with emergency assistance.
- Classify cells of tuberculosis infection and carry out preventive anti-tuberculosis measures in them.

As a result of studying physiology 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;
- Renggenologic 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 tuberculin test of Mantova and Kohn;
- 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;
- Spirography, its indicators and evaluation.
- 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 and cirrhotic pulmonary tuberculosis;
- clinical picture, course, diagnostic methods, differential diagnostics focal, infiltrative tuberculosis, caseous pneumonia, tuberculoma, fibrous - cavernous, cirrhotic tuberculosis of the lungs;
- principles of treatment of focal, infiltrative tuberculosis, caseous pneumonia, tuberculoma, fibro-cavernous, cirrhotic tuberculosis the lungs
- pathogenesis of tuberculous pleurisy;
- clinical picture, course, diagnostic methods, differential diagnostics tuberculous pleurisy;
- pathogenesis of various complications of respiratory tuberculosis;
- clinical picture, methods of diagnosis of complications (hemoptysis and hemoptysis) pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart, amyloidosis of internal organs);
- Principles of treatment of tuberculous pleurisy and complications of tuberculosis.
- Clinical and X-ray characteristics of the stages of silicosis;
- features of the course, diagnosis, treatment of silicotuberculosis;
- 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;
- complex of measures of family doctor, district therapist, pediatrician, aimed at early detection and prevention of tuberculosis;

be able:

- to analyze the main sections of the clinical classification of tuberculosis;
- to reveal radiological signs of clinical forms of pulmonary 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 identify and interpolate pathological changes on the chest radiographs

cages;

- to study the smear from the sputum of the patient under a microscope;
- to evaluate the results of sprouting;
- 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 evaluate the results of spirometry;
- 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 draw up a plan of preventive measures in the cell of tuberculosis infection;

- to determine indications and contraindications for BCG vaccination and revaccination;

- To select individuals for chemo prophylaxis.

- to describe basic X-ray syndromes in primary forms tuberculosis;

- to diagnose primary forms of tuberculosis on the basis of anamnestic, Clinical X-ray, laboratory data;

- To formulate and substantiate the clinical diagnosis of a patient with tuberculosis according to the classification;

- to appoint a complex therapy in different forms of the primary tuberculosis;

- to conduct differential diagnostics of tuberculosis and its complications;

- 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. Explain the significance of bacterioscopic and bacteriological methods of sputum research.
4. Apply the basic principles of treatment for patients with tuberculosis and determine the criteria for their treatment.
5. To use the principles of clinical examination of persons at risk of tuberculosis and the principles of tuberculosis prevention.
6. Demonstrate the ability to maintain medical records in the clinic of phthisiology.
7. Diagnose and provide emergency care for emergency conditions in patients with tuberculosis.
8. Classify cells of tuberculosis infection and use the principles of anti-tuberculosis measures in them.
9. Plan a survey of a patient with tuberculosis, analyze the findings and determine treatment regimens for patients with different clinical forms of tuberculosis.

Програма навчальної дисципліни

## **Semantic module 1. General issues of phthisiology**

Specific goals:

- Determine the risk factors for TB.
- To describe the features of the pathogens of tuberculosis.
- To treat the peculiarities of ways of infection with mycobacterium tuberculosis.
- Analyze the main sections of the clinical classification of tuberculosis and formulate the clinical diagnosis according to the classification.

### **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.**

Tuberculosis as a social, medical and scientific problem.

The main stages of the development of the doctrine of tuberculosis. The significance of the works of Hippocrates, Avicenna, R.Laneenk, R.Koha, I.Pulya, K.Rentgen. The role of scientists MI Pirogov, A.Kalmetta and Guerin, S.P.Botkin, F.G.Yanovsky, O.A.Kiselya, Z.Vaksman, M.P.Pilipchuk, O.S.Mamolot, K. Stilbo

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

Risk Factors for TB. Tuberculosis pathomorphosis.

Tobacco pathogen, morphological structure, properties. Mandlivity of MBT (L-forms, filtering forms, persistence, reversal). Chemically resistant MBT (multidrug

resistance-expanded resistance) and their clinical significance. Atypical mycobacteria. The stability of the Office in the environment.

Infection with tuberculosis, ways of penetration and spread of MBT in the human body. Local and general body reactions to tuberculosis infection. Natural resistance to tuberculosis and anti-tuberculosis immunity. Humoral and cellular immunity, their mechanisms.

Clinical classification of tuberculosis. Principles of construction of classification of tuberculosis. The classification sections reflecting the type of tuberculosis process, the main clinical forms, the characteristics of the tuberculous 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.

## ***2. The method of examination of a patient with tuberculosis.***

Specific goals:

- Determine the categories of people at high risk of TB.
- Identify clinical signs of tuberculosis.
- Determine the role of bacterioscopy and bacteriological methods of sputum research.
- Determine the type of stability of the Office according to the data of bacteriological research.
- Treat major X-ray syndromes in a TB clinic.
- To determine the tactics of physicians of the institutions of the general medical network for patients according to their X-ray and bacterioscopy sputum research.
- Analyze the results of the Mantoux test with 2 TPD-L tests.
- Explain the concept of "turning" a tuberculin test and its importance for early diagnosis of tuberculosis.
- Analyze the basic indicators of the function of external breathing.

### **Theme 2. Organization of detection and diagnosis of tuberculosis. Special methods of detection and diagnosis of tuberculosis (microbiological diagnostics, X-ray diagnostics, tuberculin diagnostics).**

Ways and methods for detecting tuberculosis. Categories of people at high risk for TB. Early, timely, late and late detection of tuberculosis. Participation of healthcare workers in the detection of tuberculosis.

Features of clinical examination of a patient with tuberculosis: complaints, anamnesis of disease and life; physical examination methods (palpation, percussion, auscultation); diagnostic value of changes in the hemogram.

Microbiological diagnostics: methods of bacterioscopic, bacteriological and biological detection of MBT, the significance of their results for the diagnosis of tuberculosis. Determination of the sensitivity of MBT to anti-TB drugs.

Methods of X-ray examination of patients with tuberculosis of the respiratory organs. X-ray, tomo- and fluorography, X-ray, computer tomography. Radiological syndromes: lung root damage, dissemination, infiltration, spherical shadow, cavity,

pulmonary changes (fibrosis). Clinical forms of pulmonary tuberculosis in the X-ray image. X-ray, tomo- and fluorogram analysis.

Population groups subject to mandatory annual fluorographic survey.

The purpose of tuberculin diagnostics. The notion of tuberculin. Mantoux test with 2 TP PP-L: displays, techniques, evaluation of results. The concept of a "turn" of a tuberculin test. Differential diagnostics of postvaccinal and infectious immunity.

### **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. General principles of treatment for patients with tuberculosis.**

##### **Antimycobacterial drugs. Standard treatment regimens patients with tuberculosis**

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. Adverse reactions to antimycobacterial drugs, their prevention and methods of elimination. Criteria for the treatment of patients with tuberculosis. Treatment regimens for DOTS, DOTS plus programs. Observation of the state of patients with tuberculosis in the process of treatment.

#### **Theme 4. 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.

### **Content module 4. Primary forms of tuberculosis.**



## **Complications of primary forms.**

Specific goals:

- Describe the main X-ray syndromes in primary forms of tuberculosis.
- Diagnose primary forms of tuberculosis based on anamnestic, clinical-radiological, and laboratory data.
- Formulate a clinical diagnosis of primary forms according to the classification.
- Assign comprehensive therapy in various forms of primary tuberculosis.
- Diagnose the complications of primary forms of tuberculosis.

## **Topic 5. Tuberculosis prevention.**

Social prevention.

Sanitary prophylaxis, its task. Concept about the center of tuberculous infection. Categories of cells according to the degree of epidemiological danger. Work in the cell of tuberculosis infection in the prevention of tuberculosis. Sanitary and educational work.

BCG and BCG-M vaccination, BCG vaccination. BCG and BCG-M vaccine. The technique of vaccination and revaccination. Impressions and contraindications for vaccination and revaccination. Complications of TB vaccinations.

Chemoprophylaxis of tuberculosis, displays, methods of conducting.

Infectious control, components of infection control.

## **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.**

**Morphological basis of tuberculosis of unidentified localization. Clinical manifestations, course. Differential diagnosis of tuberculosis of unidentified localization with helminthis, rheumatism, chronic tonsillitis. Treatment.**

Classification of intracranial lymph nodes. Clinical and X-ray forms of tuberculous bronchoadenitis: infiltrative, tumorous, "small". Pathogenesis, pathomorphology, clinic, course. Differential diagnostics with non-specific adenopathies, lymphogranulomatosis, sarcoidosis. Lying Consequences.

Pathogenesis and pathomorphology of the primary tuberculosis complex. Clinical manifestations, course, diagnostics. Differential diagnostics with nonspecific pneumonia, eosinophilic infiltrate. Treatment. Consequences. Residual changes of the primary tuberculous complex and their significance for the emergence of secondary forms of tuberculosis.

The complication of tuberculosis of intra-chest lymph nodes and the primary tuberculous complex (atelectasis, specific lesion of the bronchi, hematogenous or lymphoematogenic dissemination, pleurisy, formation of the primary cavity), diagnostics, treatment.

Features of the course of primary forms of tuberculosis in children and adolescents.

## **Semantic module 5. Secondary forms of tuberculosis. Complications of secondary forms. Tuberculosis of the lungs in combination with other diseases.**

Specific goals:

- Describe the main X-ray syndromes in secondary forms of tuberculosis.
- Diagnose secondary forms of tuberculosis based on anamnestic, clinical-radiological, and laboratory data.
- Formulate a clinical diagnosis of secondary forms according to the classification.
- Appoint a comprehensive therapy for various forms of secondary tuberculosis.
- Diagnose the complications of secondary forms of tuberculosis.
- Provide emergency care for emergency conditions in patients with tuberculosis.
- Analyze the peculiarities of the course and treatment of pulmonary tuberculosis, combined with other diseases.

### **Theme7. Disseminated pulmonary tuberculosis. Military tuberculosis. Tuberculosis of the nervous system and the membranes. Pathogenesis, pathomorphology, clinic, diagnostics, differential diagnosis, treatment, consequences. Cure for patients.**

Pathogenesis and pathomorphology of disseminated pulmonary tuberculosis. Clinical variants of the course (acute, subacute, chronic) and their radiological signs. Clinic, diagnostics. Differential diagnostics with nonspecific pneumonia, pneumoconiosis, carcinomatosis. Treatment. Consequences. Complications of disseminated tuberculosis (pleurisy, lesion of bronchi, larynx and other organs).

Pathogenesis and pathomorphology of military tuberculosis. Clinical options. Diagnosis. Differential diagnosis with military kanciramatosi, sepsis. Treatment. Consequences.

Pathogenesis and pathomorphology of tuberculous meningitis. Clinic, features of diagnosis and flow. Method of examination of a patient with tuberculous meningitis. Spinal cord puncture and interpretation of the results of the study of cerebrospinal fluid. Differential diagnostics. Treatment. Consequences. Forecast.

### **Theme 8. Focal and infiltrative pulmonary tuberculosis. Caseous pneumonia. Tuberculoma of the lungs. Fibroscopic cavernosum and cirrhotic pulmonary tuberculosis. Pathogenesis, pathomorphology, diagnostics, differential diagnosis, treatment, consequences. Cure for patients.**

Pathogenesis and pathomorphology. Methods of detection, clinic and the course of focal and infiltrative forms of tuberculosis. Methods of determining the activity of tuberculosis centers. Causes of the progression of focal tuberculosis and the formation of common processes. Clinical and X-ray variants of infiltrates. Differential diagnostics of focal tuberculosis with nonspecific pneumonia; infiltrative tuberculosis - with pleuropneumonia, lung cancer, eosinophilic infiltrate.

Features of the course of caseous pneumonia. Differential diagnosis of caseous pneumonia with nonspecific pneumonia. Treatment. Consequences.

Classification of pulmonary tuberculosis. Features of the course of pulmonary tuberculosis. Differential diagnostics of pulmonary tuberculosis with peripheral cancer, echinococcal cyst. Treatment. Consequences.

Causes of fibrous-cavernous tuberculosis of the lungs. Pathogenesis, pathomorphology, major clinical syndromes, X-ray signs of fibro-cavernous and cirrhotic pulmonary tuberculosis. Options for the clinical course. Differential diagnostics of fibrous-cavernous tuberculosis of lungs with chronic abscess, cancer; cirrhotic tuberculosis of the lungs - with post-tuberculous cirrhosis. Treatment. Consequences.

**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.**

**Cure for patients. Protecting the history of the disease.**

Pathogenesis, pathomorphology and classification of tuberculous pleurisies. The main clinical syndromes of pleurisy. Modern diagnostic methods. Impressions before conduction of a pleural puncture, a technique of its conduction. Differential diagnosis of tuberculous pleurisy with pleurisy with pneumonia. Treatment. Consequences.

Pathogenesis, clinic, diagnostics and principles of treatment of hemoptysis, pulmonary haemorrhage, spontaneous pneumothorax, chronic pulmonary heart and amyloidosis. Emergency delivery for pulmonary haemorrhage, spontaneous pneumothorax.

Protecting the history of the disease.

**Theme 10. Tuberculosis of peripheral lymph nodes. Tuberculosis bones and joints. Clinic, diagnostics, treatment.**

Pathogenesis and pathomorphology. Urban and general manifestations. Clinical forms of tuberculosis of peripheral lymph nodes. Diagnosis. Treatment.

Clinic for tuberculosis of bones and joints. Diagnosis. Treatment.

**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.**

Pneumoconiosis. Classification, pathomorphology, form, flow. X-ray characteristics of the stages of pneumoconiosis. Silicosis. Differential diagnostics with pulmonary tuberculosis. Silicotuberculosis Clinic, treatment.

Causes of tuberculosis development in AIDS patients. The most common forms, course, treatment.

Tuberculosis in conjunction with pregnancy. Tuberculosis in patients with diabetes mellitus, ulcers in the stomach.

## Structure of the discipline

Topics	Lectures	Practical Lessons	CPC
<b>Content module 1. 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, tuberculin skin test).	2	4	5
Together with content module 2	2	4	5
<b>Content module 3. Treatment and prevention of tuberculosis.</b>			
Theme 3. Treatment of tuberculosis: basic principles and methods. Standard chemotherapy regimens. Drugs for treatment of tuberculosis	1	4	4
Theme 4. Nonspecific treatment of pulmonary tuberculosis. ( <i>hygiene and dietary regime, pathogenetic, symptomatic treatment</i> ) Methods of surgical treatment of pulmonary tuberculosis <i>Sanatorium and spa treatment</i>	-	-	4
Theme 5.. Prophylaxis of tuberculosis Social prevention. Sanitary prophylaxis, BCG and BCG-M vaccination Complications of TB vaccinations. Chemoprophylaxis of tuberculosis	1	4	-
Together with content module 3	2	8	8
<b>Content module 4. Primary forms of tuberculosis. Complications of primary forms.</b>			
Theme 6. Primary tuberculosis. Tuberculosis of unknown location. Tuberculosis of the intrathoracic lymphatic nodes. Primary complex. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications of primary tuberculosis. Prognosis. Treatment	0,5	4	-
Together with content module 4	0,5	4	-
<b>Content module 5. Secondary forms of tuberculosis. Complications of secondary forms. Tuberculosis of the lungs in combination with other diseases.</b>			

Theme 7.. Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of nervous system. Tuberculous meningitis. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment.	0,5	4	4
Theme 8. Focal and infiltrative tuberculosis. Caseous pneumonia. Tuberculoma. Fibro-cavernous tuberculosis. Cirrhotic tuberculosis. Pathogenesis. Pathomorphology. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment.	0,5	4	8
Theme 9. Pleural tuberculosis. TB pleuritis and empyema. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment. Examination of the patients. Complications of secondary tuberculosis: hemoptysis, hemorrhage, spontaneous pneumothorax, chronic cor pulmonale, amyloidosis of internal organs. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Case report defence.	0,5	4	-
Theme 10. <i>Tuberculosis of peripheral lymph nodes. Tuberculosis bones and joints. Clinic, diagnostics, treatment.</i>	-	-	4
Theme 11. <i>Tuberculosis of the lungs, combined with professional dust diseases. Tuberculosis in patients with HIV / AIDS. Clinic, diagnostics. Features of the course and treatment.</i>	-	-	13
Together with content module 5	1,5	12	29
<b>Total-90/3 ,loans ECTS</b>	<b>8</b>	<b>32</b>	<b>50</b>
Final control	exam		

## CURRICULUM of the Lectures in Phthisiology

№	Topics	Hours
1.	Tuberculosis as scientific and practical problem. The history of tuberculosis. Epidemiology of tuberculosis. Etiology and pathogenesis of tuberculosis. Tuberculosis immunity.	2
2.	Organization of revealing and diagnosis of tuberculosis.	2
3.	Treatment of tuberculosis: basic principles and methods. Prophylaxis of tuberculosis.	2
4.	Primary and secondary tuberculosis.	2
	<b>Total</b>	<b>8</b>

## CURRICULUM of the Practical Lessons in Phthisiology

№	Topics	Hours
1.	Epidemiology of tuberculosis. Etiology and pathogenesis of tuberculosis. Tuberculous immunity. Clinical classification of tuberculosis.	4
2.	Organization of revealing and diagnosis of tuberculosis. Special methods of revealing and diagnosis of tuberculosis (bacteriologic examination, chest radiography, tuberculin skin test).	4
3.	. Treatment of tuberculosis: basic principles. Anti-TB drugs. Standart drug regimens.	4
4.	Prophylaxis of tuberculosis.	4

<b>№</b>	<b>Topics</b>	<b>Hours</b>
5.	Primary tuberculosis. Tuberculosis of unknown location. Tuberculosis of the intrathoracic lymphatic nodes. Primary complex. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications of primary tuberculosis. Prognosis. Treatment.	4
6.	Disseminated tuberculosis. Miliary tuberculosis. Tuberculosis of nervous system. Tuberculous meningitis. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment	4
7.	. Focal and infiltrative tuberculosis. Caseous pneumonia. Tuberculoma. Fibro-cavernous tuberculosis. Cirrhotic tuberculosis. Pathogenesis. Pathomorphology. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment.	4
8.	Pleural tuberculosis. TB pleuritis and empyema. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment. Examination of the patients. Complications of secondary tuberculosis: hemoptysis, hemorrhage, spontaneous pneumothorax, chronic cor pulmonare, amyloidosis of internal organs. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Case report defence.	4
	<b>Total</b>	<b>40</b>

### CURRICULUM of the Out of Class Working

<b>№</b>	<b>Theme</b>	<b>Hours</b>	<b>Type of control</b>
1.	Strains of M. tuberculosis, their types, virulence, infectivity and transmission. Persistence and reversion of M. tuberculosis. Transmission of tuberculosis. TB drug resistance, its clinical significance	4	Current control on practical classes
2.	The main epidemiological indices	4	
3.	Methods of early revealing of tuberculosis. Timely, untimely, lately diagnosed tuberculosis. Prompt identification of persons with pulmonary tuberculosis. High risk groups for TB infection and TB disease. Selected high-risk settings.	5	
4.	Categories and groups of tuberculous patients	4.	
5.	Nonspecific therapy of tuberculosis (hygiene-dietary regimen, pathogenetic and symptomatic treatment). Surgical treatment. Facilities in sanatoria and health resorts	4.	
6.	Tuberculosis of the peripheral lymphatic nodes. Bone and joints tuberculosis. Symptoms and signs. Diagnosis. Treatment.	4	
7.	Differential diagnosis of disseminated pulmonary tuberculosis.	4	
8.	Differential diagnosis of infiltrative pulmonary tuberculosis.	4	
9.	Differential diagnosis of fibrous-cavernous pulmonary tuberculosis	4	
10.	Pulmonary tuberculosis combined with professional pulmonary disease.	4	
11.	Tuberculosis and pregnancy. Tuberculosis in patients with diabetes mellitus, gastric and duodenal ulcer	4 .	
12.	Tuberculosis in HIV/AIDS patients . Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment.	5	
	<b>Total</b>	<b>50 .</b>	

## 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

Assessment of the student's oral response			
«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 и менее%
<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.

Assessment of the demonstration of practical skills			
«Perfect»	«Good»	«Satisfactorily»	«Unsatisfactorily»
The student has mastered the practical skills provided by the program.	The student performs practical skills, but does not assume fundamental errors.	The student made serious mistakes in the implementation of practical skills.	The student did not develop practical skills; did not develop the skills provided by the program.

### 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- ball scale	200- ball scale
5	120
4.95	119
4.91	118
4.87	117
4.83	116
4.79	115
4.75	114
4.7	113
4.66	112
4.62	111
4.58	110
4.54	109
4.5	108

4- ball scale	200- ball scale
4.45	107
4.41	106
4.37	105
4.33	104
4.29	103
4.25	102
4.2	101
4.16	100
4.12	99
4.08	98
4.04	97
3.99	96
3.95	95

4- ball scale	200- ball scale
3.91	94
3.87	93
3.83	92
3.79	91
3.74	90
3.7	89
3.66	88
3.62	87
3.58	86
3.54	85
3.49	84
3.45	83
3.41	82

4- ball scale	200- ball scale
3.37	81
3.33	80
3.29	79
3.25	78
3.2	77
3.16	76
3.12	75
3.08	74
3.04	73
3	72
Less 3	It's a bad thing



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 Phthysiology 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.

Пакет завдань семестрового екзамену містить 25 тестових завдань, 2 теоретичні питання, 2 клінічні ситуаційні задачі, опис та інтерпретацію рентгенограми.

### **Table of assessment of semester exam**

<b>Test control</b>	<b>Theoretical issues</b>	<b>Clinical situational tasks</b>	<b>Description and interpretation of X-rays</b>
The correct solution to the test task is 1 point (maximum score is 25)	«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
	«unsatisfactorily» 0 points	«unsatisfactorily» 0 points	«unsatisfactorily» 0 points

### **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 scale</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 get	3
Below is the minimum number of points that the student should collect	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***

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, SP Botkin, FG Yanovsky, Z. Waxman in the development of the doctrine of tuberculosis.
3. The pathogens of tuberculosis, its types and forms of existence (L-forms), properties. The concept of persistence and reversion of mycobacterium tuberculosis.
4. Atypical Mycobacterium. Classification. Mycobacteriosis

5. The main epidemiological indicators of the prevalence of tuberculosis and their assessment.
6. Sources of tuberculosis infection. Allocation of mycobacteria into the environment.
7. Tuberculosis pathogenesis. Ways of infection and distribution of mycobacterium in the human body.
8. Immunity in tuberculosis.
9. Tuberculosis pathomorphosis.
10. Clinical classification of tuberculosis.

### ***Content Module 2. Methods of medical evaluation of the patients with tuberculosis***

11. Persons ( groups) at high risk for development TB disease.
12. The main complaints in the patients with tuberculosis.
13. Laboratory studies in detection of mycobacteria tuberculosis. Drug susceptibility testing, its clinical significance.
14. Methods of radiographic examination of the patients with pulmonary tuberculosis
15. “Compulsory” groups of population for prophylactic medical evaluation.
16. Tuberculin skin testing. The role of tuberculin tests in diagnosis of latent TB infection and TB disease. Mantoux test with 2 TU of PPD-L, evaluation of its results. Skin test conversion.
17. Differential diagnosis of postinfectious (BCG) and postvaccinal allergy in children and adolescents.
18. Examination of the function of external respiration/ The main indices of pulmonary function changes ( spirometry)

### ***Content Module 3. Treatment and prophylaxis of tuberculosis***

19. Treatment of tuberculosis: basic principles and methods.
20. Standard chemotherapy regimens
21. Treatment for different categories of pulmonary tuberculosis
22. Pathogenetic and nonspecific treatment of pulmonary tuberculosis.
23. Modern methods of surgical treatment of pulmonary tuberculosis
24. Criteria of clinical recovery TB
25. Recovery from tuberculosis. Residuals and their role in relapse of tuberculosis
26. Social prophylaxis of tuberculosis
27. Sanitary prophylaxis of tuberculosis
28. Nidi of tuberculous infection, classification. Disinfection current and conclusive.
29. Prophylaxis and early diagnosis of tuberculosis in person exposed to TB infection.
30. BCG and BCG-M vaccination and revaccination. Methods and techniques. Evaluation of results
31. Complications of BCG vaccination and revaccination.
32. Chemoprophylaxis of tuberculosis.

### ***Content Module 4. Primary tuberculosis. Complications of primary tuberculosis.***

33. Early period of primary tubercular infection Primary tuberculosis. Tuberculosis of indeterminate location. Pathogenesis. Epidemiology. Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Treatment.
34. Primary complex. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
35. Tuberculosis of the intrathoracic lymph nodes. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis
36. Complications of primary tuberculosis forms.

***Content Module 5. Secondary tuberculosis (pulmonary and extrapulmonary).  
Complications of secondary tuberculosis.***

37. Disseminated tuberculosis of lungs. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
38. Focal tuberculosis of lungs. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
39. Infiltrative tuberculosis of lungs. X-ray forms of infiltrates, Pathogenesis. Symptoms and signs. Diagnosis. Differential diagnosis. Treatment. Prognosis.
40. Caseous pneumonia. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
41. Tuberculoma of lungs, Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
42. Fibrocavernous tuberculosis of lungs. Etiology, Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
43. Cirrhotic tuberculosis of lungs. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
44. Complications of lungs tuberculosis: hemoptysis, hemorrhage Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis. First aid.
45. Complications of lungs tuberculosis. Spontaneous pneumothorax, Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis. First aid.
46. Complications of lungs tuberculosis. Chronic cor pulmonale, Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis.
47. Complications of lungs tuberculosis. Amyloidosis of internal organs. Etiology Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis
48. Pleural tuberculosis. TB pleuritis and empyema. Pathogenesis. Pathomorphology. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Prognosis. Treatment.
49. Miliary tuberculosis. Pathogenesis. Clinical forms. Symptoms and signs. Diagnosis. Treatment. Prognosis.
50. Tuberculosis of nervous system. Tuberculous meningitis. Pathogenesis. Pathomorphology. Symptoms and signs. Diagnosis. Differential diagnosis. Complications. Treatment. Prognosis
51. Tuberculosis of peripheral lymphatic nodes Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis
52. Bone and joint tuberculosis. Symptoms and signs. Diagnosis. Treatment

53. Silicotuberculosis. Pathogenesis. Symptoms and signs. Diagnosis. Treatment. Prognosis

54 Tuberculosis in HIV/AIDS patients.

### **Recommended Books**

#### **Basic literature:**

1. Phthysiology. nats textbook / edited by V. I. Petrenko,. - Kyiv .: VVV "Medicine", 2015. - 472 p.
2. Pulmonology and phthisiology: a textbook in 2 volumes / Ed. Yu.I.Feshchenko, V.P. Melnyk, I.G.Ilnitsky. - Kyiv, Lviv: Atlas, 2009 - 1336 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.

#### **Additional literature:**

- 1 Phthysiology: a teaching manual. Collection of tasks for test control of knowledge / Ed. VF Moskalenko, VI Petrenko - Vinnitsa: The New Book, 2005. 296s.
2. Tuberculosis of extrapulmonary localization / Yu.I. Feshchenko, IG Ilnitsky, VM Melnik, O.V. Panasyuk; for ed. Yu.I. Feshchenko, IG Ilnitsky - Kyiv: Logos, 1998. - 376 p.
3. Diseases of the respiratory system. Reference book / Yu.I.Feshchenko, V.M.Melnyk, I.G.Ilnitsky. - Kyiv - Lviv: Atlas, 2008. - 497s.
4. Savula MM, Ladny O.Ya., Kravchenko N.S., Slyvka Yu.I. Differential diagnostics of diseases of the lungs and pleura. Ternopil: "UkrmedkNiga", 2000 - 223s.
5. Feshchenko Yu.I. Organization of control of chemo-resistant tuberculosis. Production edition. - Kyiv: Health, 2013. - 704 p.
6. Tuberculosis, HIV / AIDS: teaching. manual / RG Protsyuk, V.F.Moskalenko, V.I.Petrenko and others. Kyiv: Medicine, 2009. - 424 pp.
7. Applied questions of phthysiology of children and adolescence: Textbook / Ed. Ilnitsky I.G., Kostik A.P., Bilozir L.I., - Lviv: Atlas, 2013. - 731 p.

#### **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>