

**DESCRIPTION OF COURSE UNIT FOR DOCTORAL STUDIES
AT VILNIUS UNIVERSITY**

Scientific Area/eas, Field/ds of Science	Medical and Health Sciences (M 000): Medicine (M 001)			
Faculty, Institute, Department/Clinic	Faculty of Medicine Institute of Clinical Medicine Clinic of Chest Diseases, Immunology, and Allergology			
Course unit title (ECTS credits, hours)	Infectious and Neoplastic Diseases of the Lungs and Pleura 9 credits (240 hours)			
Study method	Lectures	Seminars	Consultations	Self-study
Number of ECTS credits	-	-	2	7
Method of the assessment (in 10 point system)	The study of the subject is completed with an exam. The exam is written. It consists of 5 questions. The value of one question is up to 2 points (inclusive). Exam duration - 1 hour. 15 min. The minimum pass score is 5.			
PURPOSE OF THE COURSE UNIT				
To familiarize the doctoral student with the clinical, radiological, and laboratory manifestations of infectious and neoplastic lung and pleural diseases. To provide knowledge about the origin, causes, risk factors, pathogenesis, histological manifestations, and biological properties, pathological physiology, modern research methods of infectious and neoplastic lung and pleural diseases. To help how to learn to diagnose, treat and prevent these diseases.				
THE MAIN TOPICS OF COURSE UNIT				
<p>Pneumonia. Definition. Classification. Community-acquired pneumonia. Hospital pneumonia. Ventilator-associated pneumonia. Pneumonia in immunosuppressed individuals. Histological changes. Etiology and pathogenesis. Clinical symptoms. Test methods - chest X-ray, sputum test, blood test, detection of pneumococcal and legionella antigens in urine, bronchoscopy. Diagnostic criteria are community-acquired pneumonia and nosocomial pneumonia. Differential diagnostics. Evaluation of the severity of community-acquired pneumonia and the patient's status. Treatment of community-acquired pneumonia. Antibiotics for pneumonia include beta-lactam antibiotics, cephalosporins, tetracyclines, macrolides, fluoroquinolones, and more. Outpatient treatment of pneumonia. Indications for hospitalization. In-hospital treatment. Hospital-acquired pneumonia. Treatment. Antipseudomonic antibiotics. Anti-staphylococcal antibiotics. Pneumonia in immunosuppressed individuals. Bronchoscopic methods. Significance of laboratory blood parameters. The course of pneumonia. Complications. Prognosis. Prevention.</p> <p>Pulmonary actinomycosis and nocardiosis. Etiology. Diagnostics. Treatment.</p> <p>Fungal lung diseases. Aspergillosis. Blastomycosis. Histoplasmosis. Candidiasis. Cryptococcosis. Pneumocystic pneumonia. Principles of diagnosis and treatment.</p> <p>Parasitic lung diseases. Amoebiasis. Ascariasis. Cysticercosis. Echinococcosis. Paragonimosis. Pentastamatozosis. Schistosomiasis. Toxocorosis. Toxoplasmosis. Trichinosis. Principles of diagnosis and treatment.</p> <p>Pulmonary tuberculosis. Epidemiology of tuberculosis. Sources of tuberculosis infection, pathogenesis. Histological changes. Immune granuloma. Diagnosis of tuberculosis. Microscopy, culture in solid and liquid media. X-ray and clinical manifestations of tuberculosis. Classification. Primary and secondary tuberculosis. Categories of tuberculosis registration and treatment. Treatment of drug-</p>				

susceptible tuberculosis. Properties and side effects of major anti-tuberculosis drugs. Treatment of multidrug-resistant tuberculosis. Second-line drugs for tuberculosis. Extremely drug-resistant tuberculosis. Latent tuberculosis. Tuberculosis prevention.

Bronchiectasis. Definition. Histological changes. Etiology and pathogenesis. Clinical symptoms. Examination methods - chest X-ray, chest computed tomography (CT), spirometry, sputum examination, blood gases examination, blood examination, bronchoscopy. Diagnostics. Search for an etiological factor - the path. Treatment. Respiratory gymnastics, antibiotic therapy, indications for surgical treatment. Principles of long-term patient care. Prognosis.

Exudative pleuritis (pleurisy). Definition. Etiology and pathogenesis - parapneumonic pleurisy, malignant pleurisy, granulomatous pleurisy, chylothorax and pseudo-chylothorax, fibrothorax due to congestive heart failure, pancreatitis, pulmonary embolism, tuberculosis. Clinical symptoms. Examination methods - chest X-ray, CT, sonoscopic chest examination, pleural puncture. Evaluation of biochemical, cytological, and bacteriological examination of pleural puncture. Diagnosis and differential diagnosis of exudative pleurisy. Treatment. Prognosis. Pleurodesis.

Lung cancer. Definition. Histological changes, histological classification. Biological properties of lung cancer. TNM and International Classification of Lung Cancer Stages. Etiology. Carcinogenesis. Prognostic and predictive factors of lung cancer. Clinical symptoms include primary lung cancer, mediastinal symptoms, metastatic symptoms, and paraneoplastic syndromes. Examination methods - chest X-ray, CT, bronchoscopy, cancer markers, and other examinations. Early diagnosis. Diagnosis and staging of the spread of lung cancer. Mediastinoscopy. Endobronchial sonoscopy. Treatment. Surgical treatment, chemotherapy, radiotherapy. Endobronchial treatment of lung cancer. Prognosis. Prevention. Differences and features in the treatment of small cell and non-small cell lung cancer. First, second, and third-line chemotherapy. Biological therapy, immunotherapy.

Rare lung tumors. Hamartoma. Carcinoid. Plasma cell granuloma. Pirogenic granuloma. Teratoma. Histological changes. Principles of diagnosis and treatment.

Differential diagnosis of peripheral lung nodule. Definition. Etiology. Examination methods - chest X-ray, chest CT, positron emission CT, bronchoscopic lung biopsy, transthoracic needle aspiration, other methods. Diagnostic algorithm. Principles of monitoring.

Malignant pleural mesothelioma. Definition. Histological changes. Etiology and pathogenesis. Clinical symptoms. Research methods - chest X-ray, CT.

RECOMMENDED LITERATURE SOURCES

1. Pocienė I, Gauronskaitė R, Galkauskas D, Mainelis A, Gruslys V, Danila E. Age as a Risk Factor in the Occurrence of Complications during or after Bronchoscopic Lung Biopsy. *Geriatrics (Basel)* 2022; 7: 34.
2. Cincilevičiūtė G, Averjanovaitė V, Mereškevičienė R, Pliatkienė G, Zablockis R, Danila E. Risk factors for complicated community-acquired pneumonia course in patients treated with β -lactam monotherapy. *Adv Respir Med* 2021; 89: 359-368.
3. Gedvilaitė V, Danila E, Cicėnas S, Smailytė G. Lung cancer in Lithuania. *J Thorac Oncol* 2020; 15: 1401-1405.
4. Miltinienė D, Deresevičienė G, Nakčerienė B, Davidavičienė VE, Danila E, Butrimienė I, Dadonienė J. Incidence of tuberculosis in inflammatory rheumatic diseases: results from a Lithuanian retrospective cohort study. *Medicina (Kaunas)*. 2020; 56(8): E392.
5. Diktanas S, Vasiliauskienė E, Polubenko K, Danila E, Čeledinaitė I, Boreikaitė E, Misiūnas K. Factors associated with persistent sputum positivity at the end of the second month of tuberculosis treatment in Lithuania. *Tuberc Respir Dis* 2018; 81: 233-240.
6. West JB, Luks AM. *Respiratory physiology. The Essentials*. 9th ed. Wolters Kluwer, 2017.

7. Broaddus VC, Mason RJ, Ernst JD, King TE, Lazarus SC et al. Murray and Nadel's textbook of respiratory medicine, 6th ed. Elsevier, Inc., 2016.
8. Weinberger SE, Cockrill BA, Mandel J. Principles of pulmonary medicine, 7th ed. Elsevier, 2019.
9. Landsberg JW. Manual for pulmonary and critical care medicine. Elsevier. 2018.

CONSULTING LECTURERS

1. Coordinating lecturer: Edvardas Danila (Prof. Dr. HP).
2. Rolandas Zablockis (Assoc. Prof. Dr.).
3. Vygantas Gruslys (Assoc. prof. Dr.).

APPROVED:

By Council of Doctoral School of Medicine and Health Sciences at Vilnius University:
29th of September 2022

Chairperson of the Board: Prof. Janina Tutkuvienė