

# SYLLABUS

## 1. General information on the course

<b>Full course name</b>	Internal Medicine
<b>Full official name of a higher education institution</b>	Sumy State University
<b>Full name of a structural unit</b>	Medical Institute. Department of Internal Medicine with a Center of respiratory medicine
<b>Author(s)</b>	Fadieieva Hanna Anatoliivna
<b>Cycle/higher education level</b>	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
<b>Semester</b>	7 semester
<b>Workload</b>	4 ECTS, 120 hours, out of which 90 hours are working hours with the lecturer (12 hours of lectures, 78 hours of seminars), 30 hours - independent work of students
<b>Language(s)</b>	English

## 2. Place in the study programme

<b>Relation to curriculum</b>	Compulsory course available for study programme "Medicine"
<b>Prerequisites</b>	"Krok-1", Required knowledge: - Latin and medical terminology, - medical biology, - medical informatics, - human anatomy - physiology, - histology, cytology and embryology, - biological and bioorganic chemistry, - microbiology, virology and immunology, - pathomorphology, - pathophysiology, - pharmacology, - hygiene and ecology, - propedeutics of internal medicine, - nursing practice, - radiology.
<b>Additional requirements</b>	There are no specific requirements
<b>Restrictions</b>	There are no specific restrictions

## 3. Aims of the course

Achievement by students of deep modern knowledge and professional skills in internal medicine, in particular the principles of diagnosis, treatment and prevention of diseases of internal organs, including mastering the skills of collecting anamnesis, conducting a physical examination, differential diagnosis and treatment principles in compliance with the principles of medical ethics and deontology based on knowledge of basic fundamental disciplines.

## 4. Contents

**Module 1. Fundamentals of diagnosis, treatment and prevention of major diseases of the digestive system.**

Topic 1 Gastroesophageal reflux disease (GERD). Dyspepsia. Chronic gastritis.

GERD, dyspepsia, chronic gastritis: definition, etiology, pathogenesis. The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. The role of H. pylori in the occurrence of chronic gastritis. Classification. Erosive and non-erosive GERD. Non-atrophic and atrophic gastritis. Clinical manifestations depending on the variant and stage. Diagnostic criteria, differential diagnosis. The value of endoscopic (with morphological verification) and X-ray examination for diagnosis. Complications. Differentiated therapy from a position of evidence-based medicine. Modern approaches to the treatment of functional dyspepsia. Patient management in a pandemic. Primary and secondary prevention. Prognosis and workability.

Topic 2 Peptic ulcer and other peptic ulcers of the stomach and duodenum.

Definition. The role of H. pylori, acid-peptic factor and medications in the occurrence of peptic ulcers and their recurrence. Features of the course of HP-positive and HP-negative ulcers. Complications (perforation, penetration, bleeding, impaired evacuation and motor function). The value of instrumental and laboratory diagnostic methods. Methods for the diagnosis of Hp infection. Modern tactics of peptic ulcer patient management from a position of evidence-based medicine. Eradication therapy. Control of eradication. Drug therapy for Hp-negative ulcers. Indications for surgical treatment. Primary and secondary prevention. Prognosis and workability. Patient management in a pandemic.

Topic 3 Biliary disease: cholelithiasis, chronic cholecystitis and functional biliary disorders.

Definition. Etiology, pathogenesis. The importance of infection, motility disorders and dyscholia in the development of chronic acalculous cholecystitis, cholangitis and gallstone disease. Features of the clinical course. The role of instrumental methods in diagnostics. Differential diagnosis. Complications. Differentiated treatment depending on the clinical option and the presence of complications, from a position of evidence-based medicine. Indications for surgical treatment. Primary and secondary prevention. Prognosis and workability.

Topic 4 Chronic diseases of the small intestine: celiac disease and other enteropathies.

Definition. Etiology, pathogenesis. The role of food intolerances, enzymopathies and immune factors. Syndromes of malabsorption and maldigestion. Diagnostic criteria, differential diagnosis. Complications. Differentiated therapy from a position of evidence-based medicine. Primary and secondary prevention. Prognosis and workability. Patient management in a pandemic.

Topic 5 Chronic diseases of the colon: ulcerative colitis, Crohn's disease, irritable bowel syndrome.

Nonspecific colitis (ulcerative colitis and Crohn's disease): definition, etiology and pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Diagnostic criteria. Differential diagnosis. Treatment. Complications and diseases associated with ulcerative colitis (sclerosing cholangitis, spondylitis, arthritis, dermatoses). Prognosis and workability. Irritable Bowel Syndrome: Definition, Rome Diagnostic Criteria. Etiology and pathogenesis. Classification. Clinical manifestations of various options. Diagnostic criteria and criteria for excluding a diagnosis. Differential diagnosis. Treatment from a position of evidence-based medicine. Primary and secondary prevention. Prognosis and workability.

#### Topic 6 Chronic hepatitis.

Definition. Classification. The role of persistence of the virus, drug agents, immune disorders and alcohol. Methods for diagnosing a viral infection. Autoimmune hepatitis, chronic viral, drug-induced hepatitis. Alcoholic liver disease. The main clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. The importance of morphological, biochemical and imaging methods. Differential diagnosis. Complications. Features of treatment of various forms from a position of evidence-based medicine. Primary and secondary prevention. Prognosis and workability. Patient management in a pandemic.

#### Topic 7 Liver cirrhosis.

Definition. Significance of viral infection, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Features of clinical manifestations and diagnostics of various forms. Differential diagnosis. Liver failure and other complications. Differentiated therapy from a position of evidence-based medicine. Emergency treatment of complications. Patient management in a pandemic. Primary and secondary prevention. Prognosis and workability.

#### Topic 8 Chronic pancreatitis.

Definition. Significance of various etiological factors. Classification. Features of the clinical course, diagnosis and differential diagnosis. Complications. Research methods in the diagnosis of pancreatitis. Differentiated treatment from a position of evidence-based medicine. Primary and secondary prevention. Patient management in a pandemic. Prognosis and workability.

### **Module 2. Fundamentals of diagnosis, treatment and prevention of major respiratory diseases.**

#### Topic 9 Chronic obstructive pulmonary disease. Bronchiectasis.

Definition of chronic obstructive pulmonary disease. The role of smoking, environmental, occupational factors and infection in the development of chronic bronchitis. Classification. Clinical manifestations. Differential diagnosis. Complications. Treatment depending on the stage by GOLD. Primary and secondary prevention. Prognosis and workability. Definition of bronchiectasis. Etiology, classification and diagnostic criteria. Differential diagnosis. Complications. Methods of conservative treatment and indications for surgical treatment from a position of evidence-based medicine. Primary and secondary prevention. Patient management in a pandemic. Prognosis and workability.

#### Topic 10 Bronchial asthma.

Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations and changes in instrumental research methods depending on the severity. Differential diagnosis. Complications. Treatment depending on the severity from a position of evidence-based medicine. The role of spirometry and peak-flowmetry. Emergency care for severe exacerbation of bronchial asthma. Primary and secondary prevention. Prognosis and workability.

#### Topic 11 Community-acquired pneumonia

Definition, etiology, pathogenesis. Features of the etiology and clinical course of aspiration pneumonia and pneumonia in persons with severe immunity defects. Criteria for the diagnosis and severity of community-acquired pneumonia. The role of laboratory and instrumental methods in diagnostics. Differential diagnosis. Features of the clinical course depending on the severity of the disease. Differential treatment from a position of evidence-based medicine. Primary and secondary prevention. Prognosis and workability.

Topic 12 Nosocomial pneumonia.

Definition, etiology, pathogenesis. Criteria for the diagnosis of nosocomial pneumonia and the severity of its course. The role of laboratory and instrumental methods in diagnostics. Differential diagnosis. Features of the clinical course depending on the severity of the disease. Differential treatment from a position of evidence-based medicine. Primary and secondary prevention. Prognosis and workability. Patient management in a pandemic.

Topic 13 Complications of pneumonia.

Definition, etiology, pathogenesis, clinical features of the course, diagnostic criteria, therapeutic options for treatment from a position of evidence-based medicine, indications and methods of surgical treatment, complications of dry and exudative pleurisy, pleural empyema, abscess and gangrene of the lung. Patient management in a pandemic.

**Module 3. Fundamentals of diagnosis, treatment and prevention of major diseases of the blood and hematopoietic organs.**

Topic 14 Anemia (iron deficiency, B12-deficiency, folate deficiency, hemolytic, aplastic, post-hemorrhagic).

Definition. Etiological factors and pathogenesis. Features of the clinical and laboratory diagnostics of various forms. Differential diagnosis. Complications. Treatment of various forms from a position of evidence-based medicine. Patient management in a pandemic. Transfusion of blood components. Primary and secondary prevention. Prognosis and workability.

Topic 15 Acute leukemias.

Definition, classification, etiology and pathogenesis of the development of acute leukemia. The main clinical syndromes. Laboratory diagnostics, diagnostic criteria and differential diagnosis. Treatment principles from a position of evidence-based medicine, criteria of remission, indications for bone marrow transplantation. Patient management in a pandemic. Prognosis and workability.

Topic 16 Chronic leukemias.

Definition, classification, etiology and pathogenesis of the development of chronic leukemia. The main clinical syndromes. Laboratory diagnostics, diagnostic criteria and differential diagnosis. Treatment principles from a position of evidence-based medicine, treatment response criteria, indications for bone marrow transplantation, patient management in a pandemic. Prognosis and workability.

Topic 17 Lymphomas.

Definition, etiology, pathogenesis and classification of lymphomas, clinical features of the course of various variants of lymphomas. The main clinical syndromes. Laboratory diagnostics, diagnostic criteria and differential diagnostics. Treatment principles from a position of evidence-based medicine, treatment response criteria, patient management in a pandemic. Prognosis and workability.

Topic 18 Multiple myeloma.

Definition, etiology, pathogenesis and classification, staging of multiple myeloma. The main clinical syndromes. Laboratory diagnosis, diagnostic criteria and differential diagnosis. Treatment principles from a position of evidence-based medicine, treatment response criteria, indications for radiation therapy, patient management in a pandemic. Prognosis and workability.

<p>Topic 19 Hemophilia.</p> <p>Definition, etiology, pathogenesis and classification of hemophilia. Clinical manifestations, laboratory diagnostics and differential diagnostics. Treatment from a position of evidence-based medicine and preoperative preparation of patients with hemophilia. Prognosis and workability. Patient management in a pandemic.</p>
<p>Topic 20 Thrombocytopenic purpura.</p> <p>Definition, etiology, pathogenesis and classification of thrombocytopenic purpura. Clinical manifestations, laboratory diagnostics and differential diagnostics. Treatment from a position of evidence-based medicine, patient management in a pandemic. Prevention of bleeding. Prognosis and workability.</p>
<p>Topic 21 Medical history presentation.</p>
<p>Topic 22 Practice-oriented exam</p>

### 5. Intended learning outcomes of the course

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

LO1	Conduct a survey and objective examination of patients with gastroenterological, pulmonological and hematological diseases, taking into account ethical aspects.
LO2	Determine the necessary list of laboratory and instrumental studies for examining a patient with pathology of the gastrointestinal tract, respiratory system and blood system, as well as interpret the results obtained.
LO3	Carry out a differential diagnosis, substantiate and formulate a diagnosis based on the analysis of laboratory and instrumental examination data.
LO4	Determine the necessary mode of work, rest and the nature of nutrition in the treatment of diseases of the gastrointestinal tract, respiratory system and blood system.
LO5	To prescribe treatment from the standpoint of evidence-based medicine, to carry out prophylaxis for patients with gastroenterological, pulmonological and hematological diseases, to perform medical manipulations.
LO6	To diagnose emergency conditions, to determine the tactics of providing emergency medical care in gastroenterology (abdominal pain, acute liver failure, gastrointestinal bleeding), pulmonology (severe exacerbation of bronchial asthma, acute respiratory failure, community-acquired and hospital pneumonia of severe course, exacerbation of pulmonary disease of chronic obstruction ) and hematology (severe anemia, agranulocytosis)
LO7	Solve medical problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility.
LO8	To implement the sanitary, hygienic and preventive measures in the case of pathological changes

LO9	Conduct an examination of the ability to work of patients with pathology of the gastrointestinal tract, respiratory system and blood system.
LO10	Maintain medical documentation, including electronic forms.
LO11	To assess the influence of the environment, socio-ecological and biological determinants on the health status of a patient with gastroenterological, pulmonological and hematological diseases.
LO12	Integrate knowledge and address complex health challenges in multidisciplinary contexts.

## 6. Role of the course in the achievement of programme learning outcomes

Programme learning outcomes achieved by the course.

For 222 Medicine:

PO1	To detect and identify the leading clinical symptoms and syndromes; to establish the most probable nosological or syndromic preliminary clinical diagnosis of diseases using standard methods, preliminary data of the patient's anamnesis, patient's examination data, and knowledge about a human, his organs and systems.
PO2	To collect information about the patient's general condition; to assess the patient's psychomotor and physical development and the state of organs and systems of the body; to assess information on the diagnosis based on laboratory and instrumental findings.
PO3	To order and analyze additional (mandatory and optional) examinations (laboratory, radiological, functional and/or instrumental) in order to perform a differential diagnosis of diseases.
PO4	To establish a final clinical diagnosis at a medical institution under control of a supervising doctor by means of informed decision and logical analysis of the obtained subjective and objective data of clinical and additional examinations, and differential diagnosis, following the relevant ethical and legal norms.
PO5	To detect the key clinical syndrome or the reason for patient's condition severity via informed decision and evaluation of the person's state under any circumstances (at home, in the street, at a healthcare facility), including under emergency and military operation conditions, in the field, with a lack of information and limited time.
PO6	To determine the nature and treatment principles (conservative, operative) in patients with diseases at a healthcare facility, at patient's home or during medical evacuation process (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures based on the principles of evidence-based medicine; if needed to go beyond the standard scheme, to substantiate the personalized recommendations under control of a supervising doctor at a medical facility.
PO7	To determine an appropriate work and rest mode in the treatment of diseases at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.

PO8	To determine an appropriate diet in the treatment of diseases at a healthcare institution, at patient's home and during medical evacuation (including in the field), based on the provisional clinical diagnosis and observing the relevant ethical and legal norms, by making a reasonable decision according to existing algorithms and standard procedures.
PO11	To determine the appropriate approach in emergency medical care case under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis using standard schemes under limited time conditions based on the principles of evidence-based medicine.
PO12	To provide emergency medical assistance under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis using standard schemes and predetermined approach under limited time conditions based on the principles of evidence-based medicine.
PO13	To organize medical evacuation procedures among the population and the military under emergency and military operation conditions (including in the field), and during the phases of medical evacuation, given the existing system of medical evacuation provision.
PO14	To perform medical procedures at a medical facility, at home or at work on the basis of a provisional clinical diagnosis and/or health parameters through making an informed decision and adhering to the relevant ethical and legal norms.
PO15	To perform procedures related to emergency medical assistance within a limited time and under any circumstances, using standard schemes on the basis of a medical emergency diagnosis.
PO16	To plan and implement a system of sanitary and preventive measures against the occurrence and spread of diseases among the population.
PO18	To search for the necessary information in the professional literature and databases; to analyze, evaluate, and apply this information. To apply modern digital technologies, specialized software, statistical methods of data analysis to solve complex health problems.
PO19	To assess environmental impact on public health.
PO21	To organize an appropriate level of individual safety (own and of those cared for) in case of typical dangerous situations in the individual field of activity.

## 7. Teaching and learning activities

### 7.1 Types of training

<b>Topic 1. Gastroesophageal reflux disease (GERD). Dyspepsia. Chronic gastritis.</b>
lect.1 "Acid-associated stomach diseases" (full-time course) Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.1 "Gastroesophageal reflux disease. Dyspepsia" (full-time course)

Definition, etiology, pathogenesis, clinical picture, diagnosis. Treatment and prevention of gastroesophageal reflux disease and dyspepsia. Prognosis and workability.

pr.tr.2 "Chronic gastritis" (full-time course)

Definition, etiology, pathogenesis, clinical picture, diagnosis. Treatment and prevention of chronic gastritis. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside (under a cooperation agreement between the hospital and the university), as well as viewing videos with endoscopic examination of the esophagus and stomach. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 2. Peptic ulcer and other peptic ulcers of the stomach and duodenum.**

pr.tr.3 "Peptic ulcer and other peptic ulcers of the stomach and duodenum 12." (full-time course)

Definition, etiology, pathogenesis, clinical picture, diagnosis of peptic ulcer and other peptic ulcers of the stomach and duodenum 12. Complications. Treatment and prevention. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside (under a cooperation agreement between the hospital and the university), viewing videos with endoscopic examination of the stomach and duodenum. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 3. Biliary disease: cholelithiasis, chronic cholecystitis and functional biliary disorders.**

pr.tr.4 "Gallstone disease" (full-time course)

Definition, etiology, pathogenesis of gallstone disease. Diagnostic criteria and the role of imaging methods, differential diagnosis, treatment. Primary and secondary prevention. Prognosis and workability.

pr.tr.5 "Chronic cholecystitis" (full-time course)

Definition, etiology, pathogenesis of chronic cholecystitis. Diagnostic criteria and the role of laboratory methods, differential diagnosis, treatment. Primary and secondary prevention. Prognosis and workability.



pr.tr.6 "Functional biliary disorders" (full-time course)

Definition, etiology, pathogenesis of functional biliary disorders. diagnostic criteria and the role of laboratory methods, differential diagnosis, treatment. primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), in the absence of quarantine, mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for examining and/or treating the patient at the patient's bedside, viewing X-ray, ultrasound video and CT scans. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

**Topic 4. Chronic diseases of the small intestine: celiac disease and other enteropathies.**

pr.tr.7 "Celiac disease" (full-time course)

Definition, etiology, pathogenesis of celization. Diagnostic criteria, the role of laboratory and instrumental methods, differential diagnosis, treatment. Prognosis and workability.

pr.tr.8 "Enteropathies (lactose intolerance, tropical sprue, bacterial overgrowth syndrome)" (full-time course)

Definition, etiology, pathogenesis of enteropathies. Diagnostic criteria and the role of laboratory methods, differential diagnosis, treatment. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside (under a cooperation agreement between the hospital and the university), viewing educational videos with their visualizations by methods of studying the small intestine. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

**Topic 5. Chronic diseases of the colon: ulcerative colitis, Crohn's disease, irritable bowel syndrome.**

lect.2 "Chronic colon disease: nonspecific colitis" (full-time course)

Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.9 "Nonspecific ulcerative colitis" (full-time course)

Definition, etiology, pathogenesis and classification of nonspecific ulcerative colitis. clinical course, diagnostic criteria, differential diagnosis. Treatment and complications. Prognosis and workability.

pr.tr.10 "Crohn's disease" (full-time course)

Definition, etiology, pathogenesis and classification of Crohn's disease. Clinical course, diagnostic criteria, differential diagnosis. Treatment and complications. Prognosis and workability.

pr.tr.11 "Irritable bowel syndrome" (full-time course)

Definition, etiology, pathogenesis, Roman diagnostic criteria and classification of irritable bowel syndrome. Clinical manifestations, differential diagnosis, treatment. Complications. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside (under a cooperation agreement between the hospital and the university), as well as viewing videos of colonoscopy and analysis of images made during irigoscopy. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-play games, case-study.

**Topic 6. Chronic hepatitis.**

pr.tr.12 "Chronic hepatitis" (full-time course)

Definition, etiology, pathogenesis and classification of viral, autoimmune and drug-induced hepatitis. Laboratory and instrumental diagnostics of various types of hepatitis.

pr.tr.13 "Chronic hepatitis" (full-time course)

Differential diagnosis. Complications. Treatment of various forms of hepatitis. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside, as well as viewing and interpretation results of CT examination, data of endoscopic, X-ray and ultrasound examination in the gastroenterological or therapeutic department, according to a cooperation agreement between the hospital and the university. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

**Topic 7. Liver cirrhosis.**

pr.tr.14 "Cirrhosis of the liver" (full-time course)

Definition. Significance of viral infection, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Clinical manifestations. Diagnostics.

pr.tr.15 "Cirrhosis of the liver" (full-time course)

Differential diagnosis. Liver failure and other complications.

pr.tr.16 "Cirrhosis of the liver" (full-time course)

Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside, as well as viewing and interpretation results of CT examination, data of endoscopic, X-ray and ultrasound examination in the gastroenterological or therapeutic department of a medical institution, according to a cooperation agreement between the hospital and the university. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

**Topic 8. Chronic pancreatitis.**

pr.tr.17 "Chronic pancreatitis" (full-time course)

Definition, etiology, classification of chronic pancreatitis. Features of the clinical course, diagnosis and differential diagnosis. Laboratory and instrumental research methods in the diagnosis of chronic pancreatitis.

pr.tr.18 "Chronic pancreatitis" (full-time course)

Differentiated treatment. Complications. Indications for surgical treatment. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the classroom (testing, discussion of situational tasks), mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient at the patient's bedside, viewing and interpretation visualization research methods in the departments of a medical institution. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

**Topic 9. Chronic obstructive pulmonary disease. Bronchiectasis.**

pr.tr.19 "Chronic obstructive pulmonary disease" (full-time course)

Definition, etiology, pathogenesis and clinical manifestations of chronic obstructive pulmonary disease.

pr.tr.20 "Chronic obstructive pulmonary disease" (full-time course)

Diagnostic criteria and differential diagnosis of chronic obstructive pulmonary disease. Complications. Treatment, prognosis and workability.

pr.tr.21 "Bronchiectasis" (full-time course)

Definition, etiology, classification, diagnostic criteria and clinical manifestations of bronchiectasis. Differential diagnosis. Complications. Conservative treatment, indications for surgical treatment. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the ward – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for examination and/or treatment; use of a spirograph, peak-flowmeter and training in working with the main types of inhalation components used in pulmonology, the viewing and interpreting imaging research methods in the departments of a medical institution. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 10. Bronchial asthma.**

lect.3 "Bronchial asthma" (full-time course)

Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.22 "Bronchial asthma" (full-time course)

Definition. Etiology, features of pathogenesis. Classification. Clinical manifestations and changes in these instrumental research methods, depending on the severity. Differential diagnosis.

pr.tr.23 "Bronchial asthma" (full-time course)

Complications. Treatment depending on the severity. Emergency care for severe exacerbation of bronchial asthma. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient; use of a spirograph, peak flow meter and training in working with the main types of inhalation components used in the treatment of bronchial asthma, the viewing and interpreting imaging research methods in the departments of a medical institution. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 11. Community-acquired pneumonia**

lect.4 "Pneumonia" (full-time course)

Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line)

pr.tr.24 "Community-acquired pneumonia" (full-time course)

Definition, etiology, pathogenesis of community-acquired pneumonia. Diagnostic criteria and severity. The role of laboratory and instrumental methods in diagnostics.

pr.tr.25 "Community-acquired pneumonia" (full-time course)

Features of the etiology and clinical course of aspiration pneumonia and pneumonia in persons with severe immunity defects. Differential diagnosis. Features of the clinical course depending on the severity of the disease. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient; the viewing and interpretation of X-ray and CT studies in the departments of a medical institution. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 12. Nosocomial pneumonia.**

pr.tr.26 "Nosocomial pneumonia" (full-time course)

Definition, etiology, pathogenesis, diagnostic criteria, clinical features course, differential diagnosis, treatment of nosocomial pneumonia. Primary and secondary prevention. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient; viewing and interpretation of X-ray and CT studies in the departments of a medical institution. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 13. Complications of pneumonia.**

pr.tr.27 "Complications of pneumonia" (full-time course)

Definition, etiology, pathogenesis, clinical features of the course, criteria for diagnosis, treatment and complications of dry and exudative pleurisy, pleural empyema, abscess and gangrene of the lung. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient; viewing and interpretation of X-ray and CT studies in the departments of a medical institution, viewing video materials with a demonstration of the technique of performing pleural puncture, installing drainage. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 14. Anemia (iron deficiency, B12-deficiency, folate deficiency, hemolytic, aplastic, post-hemorrhagic).**

lect.5 "Anemia" (full-time course)

Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.28 "Iron deficiency and post-hemorrhagic anemia" (full-time course)

Definition, etiology and pathogenesis, clinical picture, diagnosis, differential diagnosis, treatment of iron deficiency and posthemorrhagic anemia.

pr.tr.29 "B-12 deficiency and folate-deficiency anemia" (full-time course)

Definition, etiology and pathogenesis, clinical picture, diagnosis, differential diagnosis and treatment of B12-deficiency and folate-deficiency anemia.

pr.tr.30 "Hemolytic and aplastic anemia" (full-time course)

Definition, etiology and pathogenesis, clinical picture, diagnosis, differential diagnosis and treatment of hemolytic and aplastic anemia. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the hospital and university). With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

#### **Topic 15. Acute leukemias.**

pr.tr.31 "Acute leukemias" (full-time course)

Definition, classification, etiology, pathogenesis, clinical syndromes, laboratory diagnosis of acute leukemia.

pr.tr.32 "Acute leukemias" (full-time course)

Diagnostic criteria, differential diagnosis, treatment, remission criteria, indications for bone marrow transplantation, prognosis and workability in acute leukemia. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the hospital and university); familiarization with the set for performing trepanobiopsy and sternal puncture and watching video instructions for using a needle for bone marrow puncture and trepanobiopsy. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

#### **Topic 16. Chronic leukemias.**

lect.6 "Chronic leukemias" (full-time course)

Teaching is carried out in the form of multimedia lectures (in the presence of quarantine - on-line).

pr.tr.33 "Chronic leukemias" (full-time course)

Definition, classification, etiology, pathogenesis, main clinical syndromes and laboratory diagnosis of chronic leukemia.

pr.tr.34 "Chronic leukemias" (full-time course)

Diagnostic criteria, differential diagnosis, treatment, treatment response criteria, indications for bone marrow transplantation, prognosis and workability in chronic leukemia. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the hospital and university); familiarization with the set for performing trepanobiopsy and sternal puncture and watching video instructions for using a needle for bone marrow puncture and trepanobiopsy. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, mastering skills through role-playing games, case-study.

### **Topic 17. Lymphomas.**

pr.tr.35 "Lymphomas" (full-time course)

Definition, etiology, pathogenesis, clinical manifestations, laboratory diagnostics, diagnostic criteria and differential diagnostics. Treatment principles, treatment response criteria. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed - mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the medical institution and university) viewing video instructions for puncture and biopsy of the lymph node; viewing and interpretation of X-ray, CT and PET CT studies. With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

### **Topic 18. Multiple myeloma.**

pr.tr.36 "Multiple myeloma" (full-time course)

Definition, etiology, pathogenesis and classification, staging and clinical syndromes of multiple myeloma. Laboratory diagnostics, diagnostic criteria and differential diagnosis, treatment, treatment response criteria, indications for radiation therapy. Prognosis and workability. The study of this topic involves theoretical work in the study room, at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the hospital and university); familiarization with the set for puncture and biopsy of the lymph node; application of virtual simulation (review and interpretation of X-ray, CT, PET CT and scintigraphic studies). With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.

### **Topic 19. Hemophilia.**

<p>pr.tr.37 "Hemophilia" (full-time course)</p> <p>Definition, etiology, pathogenesis and classification of hemophilia. Clinical manifestations, laboratory diagnostics and differential diagnostics. Treatment and preoperative preparation of patients with hemophilia. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and/or treatment of the patient (under a cooperation agreement between the hospital and university). With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study.</p>
<p><b>Topic 20. Thrombocytopenic purpura.</b></p>
<p>pr.tr.38 "Thrombocytopenic purpura" (full-time course)</p> <p>Definition, etiology, pathogenesis, clinical manifestations of thrombocytopenic purpura. Laboratory diagnostics, differential diagnostics, treatment. Prevention of bleeding. Prognosis and workability. The study of this topic involves theoretical work in the study room (testing, discussion of situational tasks), at the patient's bed – mastering the skills of taking anamnesis, physical examination, analyzing laboratory and instrumental research results, conducting differential diagnostics and drawing up a plan for further examination and or treatment of the patient (under a cooperation agreement between the hospital and university). With quarantine restrictions, work with the use of a virtual simulation of the collection and analysis of the above information, as well as mastering skills through role-playing games, case-study. The defense of the medical history includes the issues of the peculiarities of collecting anamnesis, examination methods, diagnosis verification, differential diagnosis and treatment of the disease that was available in each case (according to the patient's disease, which was provided to the student for supervision).</p>
<p><b>Topic 21. Medical history presentation.</b></p>
<p>pr.tr.39 "Defense of medical history" (full-time course)</p> <p>Defense of the medical history includes questions of the peculiarities of collecting anamnesis, examination methods, diagnosis verification, differential diagnosis and treatment, secondary prevention of the disease that was available in each specific case, which was provided to the student for supervision.</p>
<p><b>Topic 22. Practice-oriented exam</b></p>
<p>assessm.40 "exam" (full-time course)</p> <p>Evaluation of theoretical answers and practical skills</p>

## 7.2 Learning activities

LA1	Practical work with a patient in specialized departments of the hospital.
LA2	Interpretation of laboratory results (clinical analysis of blood, urine, biochemical blood test, immunological studies, etc.) and instrumental (spirometry, ultrasound, CT, radiography, spirometry, etc.) examination methods.
LA3	E-learning in Google Meet, MIX learning systems



LA4	Writing medical history
LA5	Analysis of clinical cases.
LA6	Exam Preparation
LA7	Preparation and presentation of the report
LA8	Watching training videos
LA9	Working with textbooks and relevant information sources
LA10	Self-study
LA11	Individual research project (student scientific work, article, abstracts, report)
LA12	Preparation for KROK-2

## 8. Teaching methods

Course involves learning through:

TM1	Interactive lectures
TM2	Analysis of specific situations (Case-study)
TM3	Brainstorming
TM4	Role-playing game
TM5	Study discussion / debate
TM6	Team-based learning (TBL)
TM7	Research-based learning (RBL)

The discipline is taught using modern teaching methods that contribute to the development of professional abilities, aimed at training practice-oriented specialists, and stimulate scientific activity.

Ability for abstract thinking, analysis and synthesis. Ability to learn, acquire modern knowledge and apply it in practical situations. Knowledge and understanding of the subject area and understanding of professional activities. Ability to adapt and act in a new situation. Ability to make informed decisions; work in a team; interpersonal skills. Ability to use information and communication technologies. Certainty and persistence in the tasks and responsibilities taken.

## 9. Methods and criteria for assessment

### 9.1. Assessment criteria

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

## 9.2 Formative assessment

FA1	Defence of medical history
FA2	Teacher's instructions in the process of performing practical tasks
FA3	Oral questioning and comments of the teacher based on the results of questioning.
FA4	Assessment of written tasks
FA5	Assessment of solving situational tasks (cases)
FA6	Diagnostic testing
FA7	Peer assessment
FA8	Defense of individual research project (encouragement points)

## 9.3 Summative assessment

SA1	The total score of the current performance in the discipline
SA2	Defence of the medical history
SA3	Final control (practice-oriented exam).
SA4	Defense of individual research project (incentive points)

Form of assessment:

<b>7 semester</b>		<b>200 scores</b>
SA1. The total score of the current performance in the discipline		<b>120</b>
	Oral questioning, solving situational tasks, written tasks, practical skills	110
	Writing a medical history	5
	Defence of the medical history	5
SA3. Final control (practice-oriented exam).		<b>80</b>
	Written examination (contains 3 theoretical questions and 1 practical task).	80

Form of assessment (special cases):

<b>7 semester</b>		<b>200 scores</b>
SA1. The total score of the current performance in the discipline		<b>120</b>
	In case of quarantine, practical skills are held in remotely using the Mix.sumdu.edu.ua platform, Google meet.	110
	Writing a medical history (electronic format)	5
	Defence of medical history using Google meet.	5
SA3. Final control (practice-oriented exam).		<b>80</b>
	Oral exam (using Google meet)	80

For each practical lesson, a max of 5 points is assigned (the mark is given in the traditional 4-point grading system). At the end, the arithmetic average of the student's progress is calculated. The max number of points that a student can receive in practical classes during the academic year is  $110 \cdot \text{arithmetic mean} / 5$ . For writing a medical history and its defense, the following points are assigned: "5" – 5 p., "4" – 4 p., "3" – 3 p., "2" – 0 p. In total, a max of 10 points can be obtained for a medical history, a min – 6. The max number of points for a student's current educational activity is 120, the min is 72 (provided that the requirements of the curriculum are met). The exam consists of 4 tasks (3 theoretical questions and 1 practical task), for each of which the following points are assigned: "5" – 20 p., "4" – 16 p., "3" – 12 p., "2" – 0 p. Thus, the max number of points for the exam is 80, the min – 48. Incentive points are added to the assessment in the discipline: for a prize in the II round of the Olympiad in a discipline or in a competition of student scientific papers - 12 points, for participation in a student scientific forum in the form of an oral report - 5 points, for participation in a scientific forum in the form of a poster presentation - 4 points, in the form of publication of abstracts - 3 points, in the selection of video material on the discipline - 2 points. Recalculation of the results obtained in non-formal education is carried out on a voluntary basis and provides for confirmation that the applicant for higher education has achieved the learning outcomes provided for by the educational professional program and is regulated by the "Regulations on the transfer of learning outcomes of applicants for higher education of Sumy State University obtained in non-formal education" from 2020. The grade for the discipline is defined as the sum of points for the current educational activity (not less than 72), points for the student's individual independent work (not more than 12) and points for the exam (not less than 48). The total score for a discipline can't be more than 200.

## 10. Learning resources

### 10.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library funds, archive of roentgenograms, spiograms, electrocardiograms, computed tomograms, results of laboratory examination methods
MTS3	Medical facilities / premises and equipment ("Sumy Regional Clinical Hospital" and "Sumy Regional Specialized Dispensary for Radiation Protection of the Population")
MTS4	Computers, computer systems and networks
MTS5	Medical equipment (spirometer, peak flow meter, electrocardiograph, height meter, scales, fibrogastroscopy, tonometer, phonendoscope, capillaroscope, glucometer, infusion pump, etc.)
MTS6	Software (to support distance learning, Internet survey, virtual laboratories, virtual patients, for creating computer graphics, modeling, etc.)
MTS7	Multimedia, video and reproducing, Projection equipment (video cameras, a projector, screens, smartdos, etc.)

### 10.2 Information and methodical support

<b>Essential Reading</b>
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1	Goldman-Cecil medicine [Текст]. V.1 / L. Goldman, L. Schafer, M. Crow etc. — 25-th ed. — Saunders: Saunders Elsevier, 2016. — 1489 p.
2	Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.
3	Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. — Sumy : Sumy State University, 2019. — 136 p.
4	Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. — 3rd ed. 2017. — Cham : Springer International Publishing, 2017. — XIX, 225 p.
5	Villatoro, V. A Laboratory Guide to Clinical Hematology [Электронный ресурс] / V. Villatoro, M. To. — 1st ed. — University of Alberta, 2018. — 302 p.
<b>Supplemental Reading</b>	
1	Anna V. Kovchun, Vladyslav A. Smiianov, Nataliia G. Kuchma, Vladyslava V. Kachkovska, Lyudmyla N. Prystupa The impact of systemic inflammation on anemia in patients with chronic obstructive pulmonary disease //J. Wiadomosci Lekarskie (Польша), tom LXXIII. — 2020. — № 2. — P. 325-328.
2	Mayerle, J. Chronic Pancreatitis [Электронный ресурс] / J. Mayerle, G. Beyer. — 2017.
3	Internal Medicine [Электронный ресурс] : An Illustrated Radiological Guide / J.A. Al-Tubaikh ; by Jarrah Ali Al-Tubaikh. — 2nd ed. 2017. — Cham : Springer International Publishing, 2017. — XVI, 592 p.
<b>Web-based and electronic resources</b>	
1	EASL Recommendations on Treatment of Hepatitis C. Clinical Practice Guidelines, 2018 — 51 p. ( <a href="https://easl.eu/wp-content/uploads/2018/10/HepC-English-report.pdf">https://easl.eu/wp-content/uploads/2018/10/HepC-English-report.pdf</a> )
2	EASL Recommendations on Treatment of Hepatitis B. Clinical Practice Guidelines, 2017 — 29 p. ( <a href="https://easl.eu/wp-content/uploads/2018/10/HepB-English-report.pdf">https://easl.eu/wp-content/uploads/2018/10/HepB-English-report.pdf</a> )
3	EASL Recommendations on Nutrition in chronic liver disease, 2018 — 22 p. ( <a href="https://easl.eu/wp-content/uploads/2018/10/EASL-CPG-nutrition-in-chronic-liver-disease.pdf">https://easl.eu/wp-content/uploads/2018/10/EASL-CPG-nutrition-in-chronic-liver-disease.pdf</a> )
4	EASL Recommendations on Management of patients with decompensated cirrhosis ( <a href="https://easl.eu/wp-content/uploads/2018/10/decompensated-cirrhosis-English-report.pdf">https://easl.eu/wp-content/uploads/2018/10/decompensated-cirrhosis-English-report.pdf</a> )
5	Global Initiative for Chronic Obstructive Lung Disease. GOLD, Updated 2019, <a href="http://goldcopd.org/">goldcopd.org/</a> .
6	Global Initiative for Asthma. GINA, Updated 2019, <a href="https://ginasthma.org/">https://ginasthma.org/</a> .
7	<a href="https://www.ers-education.org/e-learning/procedure-videos/">https://www.ers-education.org/e-learning/procedure-videos/</a>