



COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Gastroenterology	

Academic staff	Core academic unit(s)
Coordinating: doc. Goda Sadauskaitė Other: Teachers of Clinic of Gastroenterology, Nephrourology and Surgery	Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Gastroenterology, Nephrourology and Surgery, Santariškių St. 2, Vilnius, Lithuania

Study cycle	Type of the course unit
Integrated Studies (Cycles I and II)	Mandatory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Seminars and practical sessions in the Hepatology and Gastroenterology ward and in endoscopy unit.	Semester VI	English

Requisites	
Prerequisites: The student must have completed the following courses: Human Anatomy, Human Histology, Human Biology, Human Physiology, Biochemistry, Human Genetics, Pathology, Propedeutics of Internal Diseases (or: Introduction to Internal Medicine), Medical Microbiology, General Microbiology and Immunology, Pharmacology, Development of Practical Nursing Skills, Applied Anatomy and Fundamentals of Radiology, Psychology, Fundamentals of Professional Communication and Psychosomatics, Public Health and Health Management, Individual Studies, Introduction to Medical Studies (History of Medicine and First Aid) Introduction to Scientific Research in Medicine and Evidence-Based Medicine, Latin Language and Medical Terminology, Infectious Diseases and Dermatovenereology I, Anesthesiology and Reanimatology, General Surgery, General Pediatrics and Neonatology, Radiology, Pulmonology, Abdominal Surgery	Co-requisites (if relevant): none.

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5 credits	135	66	69

Purpose of the course unit
Aim – to acquire knowledge of the main stages in the development of gastroenterology, hepatology and dietetics in Lithuania; to understand the physiology and pathophysiology of the digestive system organs (oesophagus, stomach, intestines, pancreas), the liver and biliary tract; to master modern diagnostic principles (endoscopic, radiological and laboratory) and the fundamentals of outpatient and inpatient management of chronic and acute digestive system

diseases. All course-related information will be announced via the VMA, while information intended for specific student groups will additionally be communicated through MS Teams.

Upon completion of the course, students must be able to:

- Collect a structured gastroenterological medical history, assess nutritional status and risk factors (dietary habits, exposure to toxic substances, genetic predisposition).
- Perform physical examination, identify specific hepatological and gastroenterological signs (ascites, jaundice, splenomegaly, signs of peritoneal irritation) and objective signs of nutritional disorders (muscle wasting, oedema, symptoms of micronutrient deficiency).
- Interpret investigation results, including serum liver enzymes, bilirubin fractions, metabolic parameters, as well as endoscopic and imaging findings.
- Develop a diagnostic and treatment plan, including individualized diet therapy, and identify comorbidities affecting digestive system function and nutrient absorption.
- Manage emergency conditions, applying first aid algorithms in cases of gastrointestinal perforation, acute liver failure or massive bleeding.
- Understand indications for invasive procedures, including when diagnostic or therapeutic endoscopy is required (EGD, colonoscopy, ERCP), liver biopsy, ascites paracentesis, or establishment of enteral feeding access (feeding tubes, gastrostomy).

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
General competencies		
Upon successful completion of this module, the student will be able to:		
To act with integrity and adhere to ethical commitments; to demonstrate empathy; to think critically and self-critically; to be creative; to show initiative and goal-oriented behaviour; to communicate effectively with others.	Seminars and practical sessions in classrooms, gastroenterology wards, and endoscopy diagnostic units. Group discussions.	Continuous assessment in classrooms, gastroenterology and dietetics wards, and endoscopy units; individual and/or group oral and/or written assessment; public presentation and discussion of a clinical case.
To recognize the limits of one's competencies and seek assistance when necessary; to solve problems and make decisions; to communicate and work in a team with specialists from other fields (surgeons, dietitians, oncologists) and experts from other disciplines.	Seminars and practical sessions in classrooms, gastroenterology wards, and endoscopy diagnostic units. Group discussions.	Continuous assessment in classrooms, gastroenterology and dietetics wards, and endoscopy units; individual and/or group oral and/or written assessment; public presentation and discussion of a clinical case.
Subject-specific competencies		
Upon successful completion of this module, the student will be able to:		
To know the physiological and pathophysiological processes of the digestive system; to perform general and specialized gastroenterological patient examination (abdominal palpation, percussion, auscultation); to understand the specific features of outpatient care.	Seminars and practical sessions in classrooms, gastroenterology wards, and endoscopy diagnostic units. Group discussions.	Continuous assessment in classrooms, gastroenterology and dietetics wards, and endoscopy units; individual and/or group oral and/or written assessment; public presentation and discussion of a clinical case.
To understand the principles of diagnosis and treatment of digestive system diseases, and the interpretation of laboratory and instrumental investigations.	Seminars and practical sessions in classrooms, gastroenterology wards, and endoscopy diagnostic units. Group discussions.	Continuous assessment in classrooms, gastroenterology and dietetics wards, and endoscopy units; individual and/or group oral and/or written assessment; public presentation and discussion of a clinical case.

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work To:
1. Presentation of the Gastroenterology module. The development and scope of gastroenterology as a science.	2								- Describe the stages in the development of gastroenterology and the current structure of this field in Lithuania; - Identify the latest scientific advances in gastroenterology, hepatology and dietetics; - Understand the relationship between the physiology and pathophysiology of digestive system organs and clinical diagnostic principles
2. Oesophageal diseases: - Gastroesophageal reflux disease (GERD) and its phenotypes (erosive GERD, NERD, hypersensitive oesophagus); - Dysphagia (oropharyngeal and oesophageal; structural and motility-related); - Odynophagia (infectious, drug-induced and chemically induced injuries); - Achalasia; - Oesophageal strictures; - Oesophageal neoplasms.			3	2			5		- Assess heartburn symptoms, distinguishing GERD phenotypes and differentiating them from functional heartburn; - Recognise types of dysphagia and justify the likely aetiology; - Suspect causes of odynophagia and identify situations requiring urgent investigation; - Decide when empirical treatment is appropriate and when more detailed investigation or referral to a specialist is required.
3. Gastroduodenal diseases. - <i>Helicobacter pylori</i> infection: its significance and impact on upper gastrointestinal pathology; - Gastritis and gastropathies: acute and chronic forms, NSAID-induced lesions and their differential diagnosis; - Peptic ulcer disease: aetiology of gastric and duodenal ulcers, clinical features, possible complications and principles of modern treatment.			3	3			6		- Know the impact of <i>Helicobacter pylori</i> infection on the development of upper gastrointestinal pathologies and be able to select appropriate treatment regimens; - Differentiate between gastritis and gastropathies, distinguishing acute and

								chronic forms as well as NSAID-induced lesions; - Recognise peptic ulcer disease and understand the aetiology, clinical features and possible complications of gastric and duodenal ulcers; - Select appropriate treatment principles for peptic ulcer disease and NSAID-induced gastropathies; - Justify the use of empirical therapy, define its limits, and identify cases requiring urgent investigation or referral for further specialist care.
4. Small intestine diseases. - Coeliac disease; - SIBO (small intestinal bacterial overgrowth); - Lactase deficiency; - Short bowel syndrome; - Small intestinal tumours (NET, GIST); - Angiodysplasias.			2	3			5	- Identify and differentiate the main small intestinal diseases: coeliac disease, lactase deficiency and small intestinal bacterial overgrowth (SIBO); - Assess signs of malabsorption; - Recognise alarm symptoms associated with small intestinal tumours (NET, GIST) and bleeding angiodysplasias; - Explain diagnostic principles used to detect small intestinal pathology (e.g. serological tests for coeliac disease or hydrogen breath tests for SIBO/lactase deficiency); - Develop a basic nutritional plan tailored to disease-specific requirements (e.g. gluten-free or lactose-free diet).
5. Inflammatory bowel diseases: ulcerative colitis and Crohn's disease.			3	3			6	- Recognise the main symptoms of IBD (chronic bloody diarrhoea, abdominal pain, tenesmus) and extraintestinal manifestations; - Differentiate ulcerative colitis from Crohn's disease; - Assess disease activity and possible complications (strictures, fistulas, toxic megacolon);

									- Explain the diagnostic algorithm for IBD; - Develop a basic treatment plan, understanding the indications for aminosaliclates, corticosteroids, immunomodulators and advanced therapies.
6. Disorders of the gut–brain axis. - Their classification; - Functional dyspepsia; - Irritable bowel syndrome (IBS); - Differential diagnosis of IBS and colitides.			2	3			5		- Understand the concept of the gut–brain axis; - Explain the biopsychosocial model; - Recognise the most common functional disorders, such as irritable bowel syndrome (IBS) and functional dyspepsia (FD), based on clinical criteria; - Differentiate functional disorders from organic diseases; - Develop a basic management plan, including lifestyle modification, dietary changes (e.g. principles of the Low-FODMAP diet) and symptomatic treatment.
7. Elevated liver enzymes: interpretation of liver injury syndromes and differential diagnosis. - Main liver injury syndromes: cytolytic, cholestatic, mesenchymal inflammatory and hepatocellular failure syndromes - Assessment and interpretation of liver function tests.			3	2			5	-	- Interpret laboratory test results, including changes in serum liver enzymes and bilirubin fractions; - Recognise and differentiate liver injury syndromes; - Identify specific hepatological signs during physical examination: ascites, jaundice, splenomegaly and signs of hepatic encephalopathy; - Develop an initial diagnostic plan, select appropriate imaging investigations (e.g. abdominal ultrasound) and assess indications for liver biopsy; - Provide patient instructions for preparation for diagnostic tests.
8. Alcohol-related, toxic (DILI) and metabolic liver injury.			3	2			5		- Recognise possible alcohol-, drug- or toxin-induced liver injury

									(DILI) based on medical history and laboratory data; - Identify the most common drug/toxin groups and individual risk factors; - Justify drug discontinuation, dose adjustment or substitution and plan further follow-up; - Recognise hepatic steatosis and identify its possible causes; - Recognise the clinical and laboratory features of MASLD; - Assess the risk of fibrosis using non-invasive methods; - Plan lifestyle modification, control of cardiometabolic risk factors and follow-up.
9. Viral, autoimmune and rare liver diseases. - Chronic viral hepatitis (HBV, HCV): assessment of liver disease progression, fibrosis staging, prevention and surveillance of complications (including HCC), and treatment strategies in gastroenterology practice - Autoimmune liver diseases (AIH, PBC, PSC): recognition, key investigations, treatment, follow-up, HCC prevention; - Rare liver diseases: Wilson's disease, haemochromatosis, A1AT deficiency, Budd–Chiari syndrome.			2	3			5		- Recognise when to suspect viral, autoimmune or rare liver disease based on clinical symptoms and key laboratory parameters; - Select and interpret basic diagnostic tests: HBV and HCV markers, autoantibodies (ANA, SMA, AMA), iron metabolism parameters, ceruloplasmin, alpha-1 antitrypsin; - Assess disease stage and the risk of liver fibrosis, cirrhosis and hepatocellular carcinoma (HCC); - Decide on the treatment strategy: antiviral therapy, immunosuppression / UDCA, specific therapy or referral to a specialised centre; - Understand treatment goals: control of disease activity, prevention of progression and prevention of complications; - Plan follow-up, including assessment of fibrosis progression, cirrhosis complications and HCC risk.

10. Liver cirrhosis and its complications. - Compensated and decompensated cirrhosis; - Portal hypertension: ascites, varices, hypersplenism; - Liver failure: HE, HRS, HPS; - HCC: risk, early diagnosis; - Transplantation: indications and timing of referral, long-term follow-up, prevention of complications.			3	3			6		- Recognise liver cirrhosis and distinguish between compensated and decompensated forms; - Assess complications of portal hypertension (ascites, varices, encephalopathy, HRS); - Identify emergency conditions requiring hospitalisation or specialist consultation; - Understand treatment strategies: management of complications, HCC surveillance, indications for transplantation; - Plan long-term care and prevention of complications.
11. Pancreatic diseases and gallstone disease in a therapeutic context. - Acute pancreatitis: main causes, assessment of severity; - Chronic pancreatitis: exocrine insufficiency, enzyme therapy, nutrition; - Pancreatic neoplasms: warning signs, diagnostic principles; - Gallstone disease: clinical forms and complications, indications for surgical treatment.			3	2			5		- Recognise acute and chronic pancreatitis based on clinical presentation and key investigations; - Assess the severity of pancreatitis and determine the need for hospitalisation; - Recognise exocrine pancreatic insufficiency and understand indications for pancreatic enzyme replacement therapy; - Recognise warning signs of pancreatic neoplasms and refer for further diagnostic evaluation; - Assess complications of gallstone disease and the need for urgent intervention; - Select appropriate investigations and interventions (abdominal ultrasound, MRCP, ERCP).
12. Clinical nutrition. Nutritional therapy.			3	3			6		- Perform nutritional status assessment to determine the patient's risk of malnutrition; - Assess anthropometric data; - Recognise clinical signs of malnutrition; - Explain the variety of diets used in nutritional therapy and their indications; - Explain the differences and indications of enteral

									- formulas used in nutritional therapy; - Explain the basic principles of nutritional therapy when feeding the patient orally (per os) or using enteral or parenteral nutrition.
13. Gastrointestinal bleeding. Endoscopic investigations in gastroenterology. - Upper and lower gastrointestinal bleeding: clinical features and differential diagnosis; - Management of critical conditions: patient stabilisation, haemodynamic assessment and emergency care algorithms; - Diagnostic and therapeutic procedures: EGD, colonoscopy, ERCP, capsule endoscopy – indications and contraindications.			2	3			5		- Identify the source of gastrointestinal bleeding based on clinical signs (haematemesis, melaena, haematochezia); - Differentiate causes of upper and lower gastrointestinal bleeding (peptic ulcer disease, varices, neoplasms, angiodysplasias); - Manage emergency conditions by applying first aid algorithms for patient stabilisation; - Assess indications for endoscopic investigations (EGD, colonoscopy, ERCP) and understand the importance of biopsy sampling; - Instruct the patient on proper preparation for EGD and colonoscopy; - Evaluate readiness for interventional procedures by checking coagulation parameters and overall clinical status; - Explain the possibilities and limitations of empirical treatment and identify situations requiring urgent referral for investigation.
Total	2		32	32			66	69	

Assessment strategy	Weight %	Deadline	Assessment criteria
Exam	100%	During the semester (after the module)	Computer-based exam structure The exam consists of 50 multiple-choice questions and clinical case scenarios. Each question or clinical case may have one or more correct answers. Overall grading. The maximum exam score is 10 points. If all questions are answered completely correctly → 10 points are awarded. The maximum value of one question is 0.2 points (10 / 50). Scoring principles for each question. All answer options (correct and incorrect) carry equal weight. If a question has <i>n</i> correct answers, the score is distributed proportionally.

			Example: if a question is worth 0.2 points and has 2 correct answers: - Correct selection: +0.1 points - Incorrect selection: -0.1 points - Correct answer not selected: 0 points Final score calculation. The final score (0–10) is obtained by summing the scores of all questions, including decimal values. Rounding to final grade. The final score is rounded to the nearest whole number: - If the decimal part $\geq 0.5 \rightarrow$ rounded up - If the decimal part $< 0.5 \rightarrow$ rounded down Examples: - 5.5 $\rightarrow$ 6 - 5.4 $\rightarrow$ 5 - 7.5 $\rightarrow$ 8 - 7.49 $\rightarrow$ 7 - 4.5 $\rightarrow$ 5 - 4.4 $\rightarrow$ 4 Passing criteria. The exam is considered passed if the final rounded grade is ≥ 5. The exam is considered failed if the grade is < 5 Examples: - 4.5 $\rightarrow$ 5 $\rightarrow$ passed - 4.4 $\rightarrow$ 4 $\rightarrow$ failed
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Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
Lecturers' video lectures uploaded to the VMA and their PDF lecture notes.	Periodically updated:	– Lecturers' video lectures and their PDF lecture notes. – VMA.		
Recommended reading				
Dan L. Longo, Anthony S. Fauci. Harrison's	2021	Gastroenterology and Hepatology.	4rd Edition.	McGraw-Hill.
Edited by Stephen C. Hauser..	2018	Mayo Clinic Gastroenterology and Hepatology Board Review.	5th Edition.	Oxford University Press.
Edited by Shanthi Srinivasan, Lawrence S. Friedman.	2017.	Sitaraman and Friedman's Essentials of Gastroenterology,	-	John Wiley & Sons.
Different authors	Periodically updated	Clinical guidelines	-	- UEG Guidelines – www.ueg.eu - ESGE Guidelines & webinars – www.esge.com - EASL Guidelines (kepenims) – www.easl.eu - ECCO Guidelines (UŽL) – www.ecco-ibd.eu

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