



## **Course: Gastroenterology**

**Year: 4th**

**Period: 1<sup>st</sup> semester**

### **Objectives**

#### **LEARNING GOALS**

##### **Knowledge and understanding:**

By the end of the course, students will have developed the knowledge and understanding necessary to describe and correlate clinical manifestations and the pathophysiological aspects of major gastroenterological diseases.

Specifically, students will:

- understand the structure and normal functioning of the gastrointestinal (GI) tract, including the liver, pancreas, and biliary system.
- comprehend the epidemiology and risk factors associated with gastroenterological diseases.
- understand the pathophysiological aspects that characterize the primary gastroenterological conditions.
- recognize the systemic consequences of gastroenterological diseases.

##### **Application of knowledge and understanding:**

Upon completion of the course, students will be equipped to apply their knowledge to understand and address individual health problems related to gastroenterological diseases.

Specifically, students will be able to:

- describe and interpret the signs and symptoms associated with gastroenterological diseases.
- describe, and differentiate the possible causes of acute and chronic diarrhoea, as well as acute and chronic abdominal pain.
- describe, and differentiate the possible causes of jaundice.
- describe the causes, clinical presentation, and management of upper and lower gastrointestinal bleeding.
- identify the most appropriate laboratory and instrumental exams for diagnosing gastroenterological conditions.
- interpret the laboratory data essential for the diagnosis and differential diagnosis of gastroenterological diseases.
- analyze the results of radiology, pathology, and endoscopy in the context of diagnosing gastroenterological diseases.



## **Contents**

### **Detailed Learning Objectives**

At the end of this set of lectures, students will be able to define the clinical characteristics, pathophysiological aspects, etiology, epidemiology, diagnosis, complications, prognosis, and treatment overview.

#### **Esophagus**

- Signs and Symptoms of Esophageal Disease: Recognize the clinical presentation of oesophageal diseases including dysphagia, odynophagia, and chest pain.
- Motor Disorders of the Esophagus: explain the pathophysiological and clinical features the pathophysiology and clinical features of disorders such as achalasia and diffuse esophageal spasm.
- Gastroesophageal Reflux Disease (GERD): describe the causes, list and recognise the clinical manifestations, select the correct diagnostic approaches and treatment options.
- Eosinophilic Esophagitis and Other Rare Esophagitis: Explore the etiology, clinical presentation, and management of eosinophilic and other rare forms of esophagitis.
- Neoplasia of the Esophagus: describe the epidemiology, risk factors, clinical features, diagnostic methods, and treatment options for esophageal cancer.
- Medical and Surgical Management of Esophageal Diseases: Discuss the various medical and surgical interventions for esophageal conditions.

#### **Stomach and Duodenum**

- Signs and Symptoms: Illustrate clinical features indicative of gastric and duodenal diseases.
- Helicobacter Pylori Infection, Gastritis, and Peptic Ulcer Disease: Explain the pathophysiology, clinical presentation, diagnostic methods, and treatment of H. pylori infection, gastritis, and peptic ulcer disease.
- Upper GI Tumors: Show the epidemiology, clinical features, diagnostic techniques, and treatment of tumors in the upper gastrointestinal tract.
- Upper GI Bleeding: Describe the causes, clinical presentation, and management of upper gastrointestinal bleeding.
- Proton Pump Inhibitors: Explain the pharmacology, clinical indications, and appropriate use of proton pump inhibitors.

#### **Pancreas**

- Pancreatic Secretion: Illustrate the normal physiology and regulation of pancreatic secretions.
- Acute and Chronic Pancreatitis: Explain the etiology, clinical features, diagnosis, complications, and management of acute and chronic pancreatitis.
- Pancreatic Adenocarcinoma: Describe the epidemiology, clinical presentation, diagnostic approaches, and treatment options for pancreatic adenocarcinoma.



- Cystic Neoplasms of the Pancreas: Show the different types of cystic pancreatic neoplasms, their clinical features, diagnosis, and management.
- Neuroendocrine Tumors of the Pancreas: describe the characteristics, illustrate the diagnostic process, and outline and discuss the treatment of pancreatic neuroendocrine tumors

### **Biliary Tract**

- Bile Secretion: Illustrate the physiology of bile production and secretion.
- Gallstone Disease: Describe the pathophysiology, clinical presentation, diagnosis, and treatment of gallstone disease.
- Autoimmune Cholestatic Liver Diseases: Describe the clinical features, diagnosis, and management of autoimmune cholestatic liver diseases.
- Tumors of the Biliary Tract: Show the epidemiology, clinical presentation, diagnostic methods, and treatment of biliary tract tumors.

### **Liver**

- Anatomy and Liver Functions: Illustrate the liver's anatomy and its physiological functions.
- Natural History of Liver Disease: Explain the progression and stages of liver disease.
- Acute and Chronic Viral Hepatitis: Study the causes, clinical features, diagnosis, and management of acute and chronic viral hepatitis.
- Genetic Liver Diseases: Explain the clinical presentation, diagnosis, and treatment of genetic liver disorders.
- Autoimmune Liver Diseases: Describe the pathophysiology, clinical features, and management of autoimmune liver diseases.
- Drug-Induced Liver Injury: List the causes and explain clinical presentation, diagnosis, and management of drug-induced liver injury.
- Clinical Diagnosis and Complications of Liver Cirrhosis: Describe the clinical features, complications, and management of liver cirrhosis.
- Hepatocellular Carcinoma: Explain the diagnosis, staging, and treatment options for hepatocellular carcinoma.

### **Small and Large Intestine**

- Epidemiology and Genetics of Colorectal Cancer: Illustrate the epidemiology and genetic factors contributing to colorectal cancer.
- Screening for Colorectal Cancer: Describe the methods and importance of colorectal cancer screening.
- Clinical Presentation and Endoscopic Management of CRC: Explain the clinical features and endoscopic approaches to managing colorectal cancer.
- Surgical Approach to Colorectal Neoplasia: Illustrate the surgical techniques used in treating colorectal neoplasms.
- Polyposis Syndromes of the GI Tract: Define the characteristics, diagnosis, and management of polyposis syndromes.
- Inflammatory Bowel Diseases: Explain the pathophysiology, clinical features, diagnosis, and treatment of inflammatory bowel diseases.



- Celiac Disease and Other Malabsorption Syndromes: Describe the clinical features, diagnosis, and management of celiac disease and other malabsorption syndromes.
- Diverticular Disease of the Colon: Show the pathophysiology, clinical presentation, and management of diverticular disease.
- Irritable Bowel Syndrome (IBS): List the clinical features, diagnosis, and management of IBS.
- Intestinal Obstruction: Explain the causes, clinical presentation, diagnosis, and management of intestinal obstruction.

## **Teaching Methods**

All modules in this course are designed to transfer knowledge by guiding students through the most relevant subjects within the discipline of Gastroenterology. Students are expected to actively participate in lectures and take notes as an integral part of the learning process.

Besides lectures, the course will include a Team Based Learning activity where students will work in small groups to answer clinical questions under the guidance of experts. Additionally, multidisciplinary interactive clinical case discussions will be implemented for selected topics to enhance understanding and application of the material.

## **Assessment of learning**

The final evaluation is composed of a written part and an oral part.

### **Written exam**

The written exam consists of a multiple-choice question (MCQ) test divided into three sections:

- Gastroenterology (30 questions)
- Pathology (10 questions)
- Diagnostic Imaging (10 questions)

To pass the written exam, students must correctly answer at least 60% of the total questions, ensuring they do not score less than 50% in any specific section.

Scores for the written exam will be based on the number of correct answers:

48-50 correct answers: Grade 30  
45-47 correct answers: Grade 28  
41-44 Correct answers: Grade 26  
38-40 correct answers: Grade 24  
35-37 correct answers: Grade 22  
31-34 correct answers: Grade 20  
30 correct answers: Grade 18

### **Oral Exam**

Students who pass the written exam will proceed to an oral exam.



**The purpose of the oral exam is to evaluate the ability of the student to:**

- show understanding of the relevance and meaning of the information and concepts recalled by answering in an organized, complete, specific, and clearly understandable manner
- show depth and soundness of knowledge and understanding of the subject of the questions by being able to make relevant connections and/or comparisons with other topics and to apply such knowledge to the clinical context and/or problem solving.

Starting from the result of the written test, the examiner will determine the final grade based on the performance of the oral exam. On average, the outcome of the oral exam will modify the grade of the written test of + or – 3 points. However, the examiner may decide that the abilities shown in the oral exam (see above) are so very poor, that even if the written test was passed the student needs to repeat the exam.

#### **Final mark**

30 e lode (30 with honors) will be assigned only to students that

- Score more than 80% correct answers on the written exam
- Perform excellently on the oral exam.

#### **Texts**

Unigastro- Digestive Diseases 2022-2025 – Editrice Gastroenterologica Italiana

Norton J. Greenberger, Gastroenterology Hepatology & Endoscopy – Current diagnosis & treatment  
McGraw Hill