UNICAMILLUS

Degree in Medicine and Surgery

Integrated Course: **Systematic Pathology II 12 ECTS**

Module: **Gastroenterology**
SDS: **MED/12**
ECTS: **2**
Professor Raffaella Lionetti e-mail: raffaella.lionetti@unicamillus.org

Module: **Endocrinology**
SDS: **MED/13**
ECTS: **3**
Professor Salvatore Maria Corsello e-mail: salvatoremaria.corsello@unicamillus.org
Professor Marco Infante e-mail: **marco.infante@unicamillus.org**

Module: **Nephrology**
SDS: **MED/14**
ECTS: **2**
Professor Remo Luciani e-mail**:** remo.luciano@unicamillus.org

Module: **Urology**
SDS: **MED/24**
ECTS: **3**
Professor Francesco Pinto e-mail: francesco.pinto@unicamillus.org

Module: **Dietary Technical Sciences**
SDS: **MED/49**
ECTS: **2**
Professor Maria Dri e-mail: maria.dri@unicamillus.org

PREREQUISITES

Students must have acquired good knowledge of embryogenic development, microscopic and macroscopic structures (anatomy and histology) of the digestive tract and liver. They should recognize physiological and pathophysiological patterns of the most relevant digestive functions. Moreover, it is a fundamental requirement that students are aware of the microscopic and macroscopic structure of the genitourinary system including the histological structure and normal human anatomy. Furthermore, they must possess the fundamental notions of physiology, Human Anatomy and recognize any correlated physiopathological pictures.

LEARNING OBJECTIVES

At the end of this course, students will acquire how to identify the principal diseases of digestive tract and of the liver, how to discriminate among main digestive symptoms and define an appropriate diagnostic flowchart, for differential diagnosis, and how to hypothesize the correct medical management for gastroenterological and liver diseases. Moreover, students will study the physiology

of the endocrine system and metabolism. They will analyze the causes and pathophysiological mechanisms of the main diseases of the endocrine system.
In addition, at the end of the program, students will know the main basics about:1) a right approach to renal disease 2) characterization of histological and morphological renal aspects 3) clinical tools and differential diagnosis in renal disease. Finally, the course aims to provide the students with the opportunity to systematically learn the pathological pictures of the genitourinary system. The student will be able to discriminate between the main signs and symptoms in order to identify a correct diagnostic procedure, to set the elements for a differential diagnosis. It will also be necessary to know the current therapeutic protocols.
Finally, this course aims to provide the student with the opportunity to systematically learn the pathological pictures of the genitourinary system. The student will have to be able to discriminate between the main signs and symptoms in order to identify a correct diagnostic procedure, to set the elements for a differential diagnosis. It will also be necessary to know the current therapeutic protocols. At the end of the course the student must be able to: provide the main notions of anatomy, physiology and pathophysiology of the urinary and male genital tract ; develop diagnostic reasoning and therapeutic planning, referring to scientific evidence

LEARNING OUTCOMES
Knowledge and understanding
At the end of this teaching, the student will be able to:

- Identify the main signs and symptoms of gastroenterological disorders
- Classify symptoms according to relevance and severity
- Set up a diagnostic flow chart to reach a proper diagnosis by connecting clinical and pathophysiological elements
- Propose medical and interventional approaches for digestive diseases
- Systematically analyze digestive pathological scenarios
- Know the principles of evidence-based medicine and identify settings for their application, and when second-line investigations are warranted
- Use web-based tools for these tasks
- Converse using specific scientific terms, and apply appropriate diagnostic and prognostic scores
- Achieve proficiency in basic patient communication, to collect relevant history, and address the fundamentals of diagnosis and treatment
- Know the pathophysiological bases of the main diseases of the endocrine system and metabolism, with particular reference to gender differences, the physiology of the endocrine system and the endocrine diseases
- Identify the main signs and symptoms of renal disorders
- Understandig symptoms according to relevance and severity
- Set up a diagnostic flow chart to reach a right diagnosis by connecting clinical and pathophysiological elements
- Knowledge of medical and interventional approaches for renal diseases
- Provide the main notions of anatomy, physiology and pathophysiology of the urinary and male genital tract
- Develop diagnostic reasoning and therapeutic planning, referring to scientific evidence
- Know the main notions of anatomy, physiology and pathophysiology of the urinary and male genital tract

- Know and discriminate between the main urological symptoms
- Know how to recognize the main urological and male genital pathologies
- Propose a sympom-based diagnostic flow chart in order to reach a diagnostic hypothesi
- Know the main urological surgical procedures
- Know the devices commonly used in urological patients (urostomies, catheters, drainage, etc...)

Ability to apply knowledge and understanding
Students must develop analytical methodological skills. They must know the principles of evidence based medicine, relate them to each specific clinical situation and identify those clinical situations that go beyond the guidelines.

Communication skills
Students must have learned an adequate technical-scientific language; they will also have to develop communication skills with the patient starting from the collection of the anamnesis up to the communication of the diagnosis and related prognosis and therapy.

Autonomy of judgment
At the end of the course of study, the student will be able to perform a logical procedure aimed at critically analyzing the information received from the patient in order to place each element in a differential diagnosis with other pathologies; he will also have to demonstrate an ability to study pathological pictures by consulting the most recent scientific literature.

STUDY COURSE PROGRAM
Gastroenterology

- The esophagus: principles of anatomy, physiology and pathophysiology
- GERD, its different phenotypes and related complications; diagnostic tools and therapy
- Primitive and secondary esophageal motility disorders.
- Esophageal neoplasias: squamous cancer, Barrett esophagus and adenocarcinoma
- H. pylori infections and related complications
- Peptic ulcers and different pattern of gastritis.
- Gastric cancer; histology and genetic and enviromental factors
- Diagnosis, prognosis and therapy of upper gastrointestinal bleeding
- Etiology of upper bleeding (ulcers, MW, angiodysplasia GAVE, Dieulafoy, Kaposi, NHL, hemobilia….)
- Celiac disease and complications
- Chronic diarrhea, diagnostic and therapeutic management
- Addominal pain: anatomical and functional disease: IBS
- Inflammatory bowel diseases: ulcerative colitis and Crohn
- Colonic lesions: polyps, colo-rectal cancer, sporadic cancer and hereditary syndromes ; genetic factors and evidence based therapy, including biologic treatments
- Physiology and pathophysiology of bile secretion ; gallstone stones and complications
- Acute and chronic pancreatitis
- The liver: functional anatomy (Rappaport unit)
- Viral, autoimmune and drug-induced hepatitis: histology, diagnostic patterns, route of transmission, clinical presentation, prognosis and therapy of chronic liver diseases
- Acute hepatitis and acute liver failure: severity scores and transplantation
- Major indications to liver transplantation.
- Liver cirrhosis, definition, scores, and major complication: portal hypertension
- Esophageal and gastric varices, portal hypertensive gastropathy: pathophysiology.

- Variceal bleeding and treatment: acute setting, primary and secondary prophylaxis
- Hepatic encephalopathy: pathophysiology, classification, prognosis and therapy
- Ascites and hydrotorax: pathophysiology, classification, prognosis and therapy
- Spontaneous bacterial peritonitis and principles of renal failure following hepatic disease.
- Pulmonary syndromes: hepato-pulmonary and porto-pulmonary syndromes
- Hepatocellular carcinoma : epidemiology, pathophysiology and treatment according to BCLC.
- Cholestatic diseases: primary biliary cholangitis and PSC
- Metabolic- induced hepatic diseases: NAFDL/ Wilson and hemocromatosis

Endocrinology

- General principles
- Physiology and pathophysiology of the hypothalamic-pituitary- endocrine gland axis.
- Physiology and pathophysiology of the endocrine pancreas.
- Diabetes Mellitus: classification, pathogenesis, clinical manifestation, medical treatment. Chronic and acute complications.
- Eating disorders and hypoglycemia
- Obesity and Metabolic Syndrome.
- Female and male gonad: From the physiology to the pathophysiology
- Physiology and pathophysiology of calcium-phosphorus metabolism of the parathyroid glands.
- Osteoporosis and endocrine diseases of the bone.
- Physiology of the thyroid gland and thyroid diseases (thyroiditis, hypothyroidism, hyperthyroidism, thyroid neoplasia).

Nephrology

- Nosography of nephropathies
- Semeiotical Nephrology
- Acid Base and electrolytes disorders
- Glomerular Nephropaties:
- Classification
- Pathogenesis
- Nephrotic Syndrome: minimal cgange disease, focal and segmental glomerulosclerosis, membranous nephropathy
- Nephritic Syndrome: post streptococcical nephritis, Berger neprhtis
- Acid base and electrolytes disorders: essentials, practical approach
- Other Glomerulonephritis: membrano-proliferative, rapidly progressive
- Secondary Nephropathies (I): LES, diabetic nephropathy
- Other Glomerulonephritis(II): crioglobulinemia, myeloma kidney, amyloidosis
- Vasculitis: PAN, ANCA Vasculitis, immunecomplex vsculitis
- Thrombotic Mycroangiopaty:,eus e PTT,
- ACUTE RENAL FAILURE I
- ACUTE RENAL FIALURE II
- EREDITARY NEPHROPATHIES: ADPKD, ALPORT syndrome, Fabry disease
- Pregnacy and kidney
- Chronic Renal Failure
- Dialysis: Hemodialysis, peritoneal dialysis, kidney transplantation

Urology

- Basics of the anatomy of the urogenital system and physiology of urination
- Bases of semiotics of the urogenital system
- Complicated and uncomplicated urinary infections
- BPH
- Bladder neck disease
- Urethral stricture
- Urological syndromes
- Urinary incontinence
- Urinary stones, hydronephrosis.
- Tumors of the urogenital system (bladder, upper urinary tract, kidney, prostate, testicle, penis)
- Genitourinary malformations
- Urological emergencies
- Bladder catheterization and other urinary drainages
- Urostomies: management and complications

Applied Dietary Technical Sciences

- Techniques and methods of nutritional semiotics and nutritional status assessment to define the state of health and the risk of disease
- Nutritional risk indicators predictive of pathologies
- Metabolic processes affecting nutrients and the role of diet in the prevention of chronic degenerative diseases
- The principles of Artificial Nutrition: Enteral and parenteral nutrition
- The basics of proper nutrition for maintaining the state of health. Know how to apply diet therapy programs in physiological, paraphysiological and pathological conditions.
- Evaluation of nutritional status and energy needs
- Principles of diet therapy
- Nutrition and chronic degenerative pathology
- Obesity phenotypes
- Intestinal microbiota and psychobiome
- Principles of nutritional genomics
- Precision Nutrition in Predictive, Preventive, Personalized and Participatory Medicine

TEACHING METHOD

The course is divided into lectures. The teachers use didactic tools such as powerpoint presentation with explanatory diagrams, illustrations and images to describe the pathologies. Attendance is mandatory.

FINAL EXAM

The exam consists of 2 parts: a written test and an oral test.
Examination questionnaire contains multiple-choice questions with only one correct answer.
Oral exam will focus on the topic listed in the program. Criteria for assessing the acquisition of knowledge are considered:
- assessment of the student's learning of the course syllabus
- ability to connect and compare different aspects and contents of the program;
- reflective skills demonstrated by the student and applicability of the contents in the various areas of clinical intervention.

Finally, judgments skills, communication skills and learning skills as in the Dublin descriptors, will

also be assessed.

READING MATERIALS

Gastroenterology

Harrison‘s Principles of Internal Medicine
Sleisenger and Fordtran’s Gastrointestinal and Liver Disease
Reviews on the above cited topics, retrieved from PubMed

Endocrinology

Williams Textbook of Endocrinology 14th edition by Shlomo Melmed, Ronald Koenig, Cliffors Rosen, Richard Auchusm Allison Goldfine

Harrison’s Endocrinology 4th edition by J.Larry Jameson, editor McGraw Hill Higher Education
Greenspan’s Basic and Clinical Endocrinology, 10th Edition by David G. Gardner, Dolores Shoback

Nephrology

Comprehensive Clinical Nephrology E-Book (English Edition) 6° Richard J. Johnson (Author), John Feehally (Author). Elsevier; 6° edizione (26 giugno 2018)

Urology

Smith and Tanagho's General urology, Jack Mcaninichch, Tom Lue, Mc Grow Hill Education
Campbell-Walsh Urology 11th Edition Review Elsevier

Applied Dietary Technical Sciences

Janice L. Kelly, Raymond Morrow
Krause and Mahan’s Food & The Nutrition Care Process 15th Edition
Elsevier