Radiology Diagnosting Imaging and Radiotherapy Techniques

MEDICAL AND CLINICAL SCIENCES II
NUMERO DI CFU: 6
SSD: MEDS-07/A (ex MED/10), MEDS-07/B(ex MED/11) , MEDS-10/A(ex MED/12)

MODULE: Elements of Diseases of the Respiratory System
NUMBER OF CFU: 2
SSD: MEDS-07/A (ex MED/10)
PROFESSOR: COPPOLA Angelo e-mail: angelo.coppola@unicamillus.org

MODULE: Elements of Diseases of the Cardiovascular System
NUMBER OF CFU: 1
SSD: MEDS-07/B(ex MED/11)
PROFESSOR: VETTA Francesco e-mail: francesco.vetta@unicamillus.org

MODULE: Elements of Diseases of the Cardiovascular System
NUMBER OF CFU: 1
SSD: MEDS-07/B(ex MED/11)
PROFESSOR:: CAVALLARO Vincenzo e-mail: vincenzo.cavallaro@unicamillus.org

MODULE: Elements of Gastrointestinal Diseases
NUMBER OF CFU: 2
SSD: MEDS-10/A(ex MED/12)
PROFESSOR: D'OFFIZI Gianpiero e-mail: gianpiero.doffizi@unicamillus.org

PREREQUISITES

Basic knowledge of the principles of anatomy and pathophysiology of cardiovascular, gastrointestinal and respiratory system

LEARNING OBJECTIVES

The aim of the integrated course is to provide students with all the tools for an adequate knowledge of epidemiology, ethiopathogenetic determinants and prognosis, as well as diagnostic and therapeutic algorithms of the main diseases of the respiratory, cardiovascular and digestive system.

LEARNING OUTCOMES

At the end of the course students should have acquired an adequate knowledge of the main clinical, diagnostic and therapeutic aspects of the pathologies treated by the single modules of the integrated course.

Knowledge and understanding

Students will be required to gain full mastery of the diagnostic and therapeutic pathways of organ diseases treated in the individual modules of the course.

Applying knowledge and understanding

Students will have to show sufficient familiarity in identifying, even during exercises held within the courses, the various phases of clinical governance.

Communication skills
Students, during the integrated course, should become fully familiar with the terminology used for the various methods of investigation and therapy.

Making judgements
At the end of the integrated course students must have acquired the clinical methodology to guarantee full autonomy of judgement in the clinical decision-making algorithms proposed by the individual modules.

COURSE SYLLABUS

SYLLABUYS Respiratory diseases

1 Introduction to pathologies of the respiratory system. Special anatomy and physiology of the respiratory system, clinical semeiotics of the main symptoms and signs of respiratory diseases.
2 Techniques and basic principles of interpretation of laboratory tests and respiratory physiopathology, respiratory function tests, arterial blood gas analysis and oximetry; walk test; polygraphic monitoring during sleep.
3 Respiratory infectious diseases: community acquired (CAP) and nosocomial (HAP) pneumonia, pneumonia in the immunocompromised host, aspiration pneumonia (ad ingestis), lung abscess.
4 Pulmonary tuberculosis. Definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy
5 Lung Cancer: definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy
6 Acute and chronic respiratory failure. Definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy.
7 Pulmonary embolism, pulmonary arterial hypertension and other pathologies of the pulmonary circulation: definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy.
8 Diffuse infiltrative lung diseases: idiopathic pulmonary fibrosis, sarcoidosis and other pulmonary interstitial diseases.
9 Bronchial asthma and respiratory immunoallergic diseases: definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy
10 Chronic obstructive pulmonary disease (COPD): definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy
11 Pleural Pathology: pleurisy and pleural effusions; pneumothorax; mesothelioma.
12 Bronchiectasis. Definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy.
13 Obstructive sleep apnea syndrome (OSAS). Definition, epidemiology, risk factors, pathophysiology, pathological anatomy, clinical and instrumental diagnosis, natural history, complications and therapy

SYLLABUS Cardiovascular diseases

1.Recalls of Anatomy and Physiology of the Cardiovascular System
2.Principles of electrocardiography
3.Principles of echocardiography
4.Ischemic Heart Disease :
a) Pathophysiology of Myocardial Ischemia
b) Chronic Coronary Syndromes,
c) Acute Coronary Syndromes
d) Instrumental Diagnostics.
5.Heart failure:
a) Pathophysiology and classification of heart failure
b) Heart failure with preserved systolic function
c) Heart failure with reduced systolic function
d) The arrhythmic risk in heart failure.
e) Non-pharmacological therapy of heart failure
6.Heart Valve Diseases
a) Rheumatic Disease, and degenerative heart disease
b) Mitral Stenosis,
c) Mitral Insufficiency
d) Aortic Stenosis
e) Aortic Insufficiency
f) Tricuspid and Pulmonary Diseases
g) Imaging techniques
7.Endocarditis
a) Epidemiology
b) Causal agents
c) Diagnostic algorithm
d) Principles of therapy
Cardiomyopathies:
a) Hypertrophic Cardiomyopathy
b) Dilated Cardiomyopathy
c) Restrictive Cardiomyopathy
d) Right Ventricular Arrhythmogenous Dysplasia
8.Arrhythmias
a) Atrial Fibrillation
b) Supraventricular paroxysmal tachycardias
c) Ventricular tachycardia
9.Instrumental techniques
a) Coronary CT scan
b) Cardiac MRI
c) Nuclear methods
d) Cardiac catheterization and angiocardiography

SYLLABUS Gastroenterology

Esophagus
• Anatomy, physiology and pathophysiology - Anatomy, physiology and pathophysiology

• Main diagnostic methods - Standard diagnostic tools
• Functional esophageal pathology - Functional diseases of the esophagus
• Gastroesophageal reflux disease (GERD) and esophagitis- Gastroesophageal reflux disease (GERD) and esophagitis
• Barrett's Esophagus - Barrett's Esophagus
• Esophageal hernia and diverticula - Hernia and diverticula
• Neoplasms of the esophagus – Neoplasms

Stomach
• Anatomy, physiology and pathophysiology
• Main diagnostic methods - Standard diagnostic tools
• Acute and chronic gastritis - Gastritis (acute and chronic)
• Helicobacter Pylori infection and disease - Helicobacter Pylori infection and disease
• Peptic ulcer disease
• Neoplasms of the stomach – Neoplasm

Small Intestines
• Anatomy, physiology and pathophysiology
• Main diagnostic methods - Standard diagnostic tools
• Celiac disease - Celiac disease
• Diverticula - Diverticula
• Neoplasms- Neoplasms
• Inflammatory bowel disease (IBD)
• Functional pathology, malabsorption, intestinal microbiota - Functional disorders, malabsorption, microbiota

Large intestine
• Anatomy, physiology and pathophysiology
• Main diagnostic methods - Standard diagnostic tools
• Diverticulosis of the colon and diverticular disease - Diverticular disease of the colon
• Neoplasms of the colon - Neoplasms

Pancreas (exocrine)
• Anatomy, physiology and pathophysiology
• Main diagnostic methods - Standard diagnostic tools
• Acute pancreatitis and its complications
• Chronic pancreatitis - Chronic pancreatitis
• Neoplasms of the pancreas- Neoplasms
Liver and biliary tract
• Anatomy, physiology and pathophysiology
• Main diagnostic methods - Standard diagnostic tools
• Liver cirrhosis and portal Hypertension
• Hepatic encephalopathy, ascites, hepato-renal syndrome
• Esophageal varices and bleeding
• Hepatocellular carcinoma (HCC)

• Gallstone disease
• Primary biliary cholangitis and primary sclerosing cholangitis
• Gallbladder cancer

COURSE STRUCTURE

The course, lasting a total of 60 hours, is divided into 3-4 hour lessons, during which the main topics of the course programme will be dealt with, using methods of interaction with students with the support of multimedia material.

COURSE GRADE DETERMINATION

The final examination will be based on a written and an oral section. The written part will be preparatory for admission to the oral phase and is based on three tests (one for each course teaching), each with 10 multiple-choice questions. In order to be admitted to the oral test, the student must pass 60% of the questions asked. Each exact question corresponds to one point, while the wrong question will not result in additional deductions to the total score which, therefore, may be a maximum of 10/10. If the student does not pass the quizzes of one or two teachings, he or she will not be admitted to the oral phase. The oral test will allow the student to acquire an overall partial score of up to 20 for each teaching, to which the score of the previous written test will be added, to obtain the overall score expressed in thirtieth. The average of the scores given will represent the final grade. At the Lecturers' discretion, students who have reached a mark of 30/30, on the basis of the overall assessment and any further application, may also be awarded cum laude.
The overall assessment will therefore be as follows:
- Not suitable: major deficiencies and/or inaccuracies in knowledge and understanding of the topics; limited capacity for analysis and synthesis, frequent generalisations.
- 18-20: barely sufficient knowledge and understanding of the topics with possible imperfections; sufficient ability to analyse, synthesise and make independent judgements.
- 21-23: routine knowledge and understanding of the topics; correct analysis and synthesis skills with coherent logical argumentation.
- 24-26: fair knowledge and understanding of the topics; good analytical and synthetic skills with rigorously expressed arguments.
- 27-29: comprehensive knowledge and understanding of the topics; considerable ability to analyse, synthesise. Good autonomy of judgement.
- 30-30L: very good knowledge and understanding of topics. Remarkable analytical and synthetic skills and independent judgement. Arguments expressed in an original manner

OPTIONAL ACTIVITIES

Any additional seminars and meetings with students in small groups

READING MATERIALS

- Title: Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine
  Author: Peter Libby, Robert O. Bonow, Douglas L. Mann, Gordon F Tomaselli, Deepak Bhatt, Scott D Solomon, Eugene Braunwald
- Publisher: Elsevier; Edition: 12 Publication: 2022
- Title: Pocket Guide for ECGs Made Easy
  Author:Barbara Aehlert
  Editor: Elsevier Health Sciences; Edition: 7 Publication year: 2022

- ESC guidelines that can be consulted and downloaded free of charge at https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines
- Harrison's Principles of Internal Medicine, 20e J. Larry Jameson, Anthony S. Fauci, Dennis L. Kasper, Stephen L. Hauser, Dan L. Longo, Joseph Loscalzo
- Materiale didattico / didactic materials