

## Radiology diagnosing imaging and radiotherapy techniques

### **INTEGRATED COURSE:    MEDICAL AND CLINICAL SCIENCES II**

**CFU: 6**

**SSD: MED/10; MED/11; MED/12**

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MODULE: RESPIRATORY SYSTEM DISEASES

CFU: 2

SSD: med/10

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MODULE: CARDIOVASCULAR SYSTEM DISEASES

CFU: 2

SSD: MED/11

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MODULE: GASTROENTEROLOGIA

CFU: 2

SSD: MED/12

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### **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, etiopathogenetic 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**

### **Syllabus Respiratory diseases**

#### **SSD: MED/10**

- 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.



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- 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**

**SSD : MED/11**

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. 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 angiocardiology

**Syllabus Gastroenterology**

SSD: MED/12

- 1. Review of anatomy, physiology and immunity of gastrointestinal system
- 2. Critical approach to patients with symptoms and signs
  - a. abdominal pain
  - b. dysphagia and other esophageal symptoms



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- c. dyspepsia
  - d. nausea and vomiting
  - e. diarrhea
  - f. intestinal gas
  - g. fecal incontinence
  - h. constipation
  - i. gastrointestinal bleeding
  - j. jaundice
3. Esophagus
- a. gastroesophageal reflux and its complications
  - b. esophageal disorders caused by infection
4. Stomach and duodenum
- a. gastritis and peptic ulcer
  - b. helicobacter pylori
  - c. tumors of the stomach
5. Pancreas
- a. acute and chronic pancreatitis
  - b. tumors of the pancreas
6. Biliary Tract
- a. gallstones disease
  - b. sclerosing cholangitis and pyogenic cholangitis
  - c. endoscopic and radiologic treatment of biliary disease (seminar)
7. Liver
- a. biochemical liver tests
  - b. infections of the liver
  - c. alcoholic liver disease
  - d. non-alcoholic liver disease
  - e. drug-induced liver disease
  - f. cirrhosis and complications
  - g. liver tumors
  - h. liver transplantation
  - i. liver biopsy and diagnosis of fibrosis (seminar)
8. Small and Large Intestine
- a. gut microbiota
  - b. infectious diarrhea and intestinal protozoa
  - c. celiac disease
  - d. inflammatory bowel diseases

- e. tumors of large intestine
  - f. gastrointestinal endoscopy procedure (seminar)
9. Psychosocial Factors in gastrointestinal disease

### **COURSE STRUCTURE**

The course, lasting a total of 60 hours, is divided into 3-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 exam is unique for the entire integrated course, it is not possible to take exam tests for the individual modules.

The final examination will be based on a written and an oral section. The written part will be preparatory to 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 will have to pass 60% of the questions asked for each course. 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. 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. In the opinion of the Professors, students who have achieved a score of 30/30, on the basis of the overall evaluation and any further questions, may also be awarded cum laude.

The final exam grade will be calculated according to the following criteria:

**Not suitable:** Poor or lacking knowledge and understanding of the topics; limited capacity for analysis and synthesis, frequent generalizations of the requested contents; inability to use technical language.

**18-20:** Just sufficient knowledge and understanding of the topics, with obvious imperfections; just sufficient capacity for analysis, synthesis and autonomy of judgment; poor ability to use technical language.

**21-23:** Sufficient knowledge and understanding of the topics; sufficient ability to analyze and synthesize with the ability to reason with logic and coherence the required contents; sufficient ability to use technical language.

**24-26:** Fair knowledge and understanding of the topics; discrete ability to analyze and synthesize with the ability to rigorously argue the required contents; good ability to use technical language

**27-29:** Good knowledge and understanding of the required contents; good ability to analyze and synthesize with the ability to rigorously argue the required contents; good ability to use technical language.

**30-30L:** Excellent level of knowledge and understanding of the required contents with an excellent ability to analyze and synthesize with the ability to argue the required contents in a rigorous, innovative and original way; excellent ability to use technical language

#### **OPTIONAL ACTIVITIES**

Any additional seminars and meetings with students in small groups

#### **READING MATERIALS**

Didactic material from the lessons