

## MALATTIE INFETTIVE (MG0426)

### 1. language

Italian

### 2. course contents

Coordinator: Prof.ssa ENRICA TAMBURRINI

Year Course: 3

Semester: 2

UFC: 6

Modules and lecturers:

- INFECTIOUS DISEASES (MG0427) - 4 cfu - ssd MED/17

Proff. Enrica Tamburrini, Roberto Cauda

- INFECTIOUS DISEASES PROFESSIONAL TRAINING (MG0428) - 2 cfu - ssd MED/17,

Gianmaria Baldin, Alberto Borghetti, Antonella Cingolani, Fernando Damiano, Katleen De Gaetano Donati, Paola Del Giacomo, Simona Di Giambenedetto, Massimo Fantoni, Francesca Giovannenze, Angela Raffaella Losito, Mothanje Barbara Patricia Lucia, Giuseppe Maiuro, Rita Murri, Giancarlo Scoppettuolo, Francesca Raffaelli, Valentina Siciliano, Francesco Taccari, Enrica Tamburrini, Elena Visconti

### 3. BIBLIOGRAPHY

Core Curriculum – Malattie Infettive di Carosi – Cauda – Castelli – Taliani – Viale Editore McGraw-Hill

Harrison. Principi di medicina interna – 20 Edizione - Editore: Casa Editrice Ambrosiana

Yellow Book 2024, Oxford University Press 2024

Soutwick F.S. – INFECTIOUS DISEASES. A CLINICAL SHORT COURSE – MCGRAW HILL  
LANGE – 4th EDITION - 2020

### 4. LEARNING OBJECTIVES

The teaching of Infectious Diseases aims :

- 1) To illustrate the characteristics of the different infectious diseases, emphasizing the correlations existing with aspects of a more general nature developed by other disciplines (e.g., microbiology, epidemiology, etc.) and this in order to recognize those peculiar characteristics of each infectious disease.
- 2) To provide students with the knowledge to understand and recognize, through the definition of etiological, epidemiological, clinical, diagnostic and therapeutic characteristics, the different infectious diseases.
- 3) To guide students in learning the peculiar characteristics and processes underlying and responsible for infectious pathology with special emphasis on diagnosis and treatment.

At the end of the Course, students should be able to: a) describe for each infectious disease the peculiar features of etiological, epidemiological, clinical, diagnostic and therapeutic nature; b) be able to make a differential diagnosis between different infectious diseases; c) describe the underlying pathophysiological aspects of individual infectious diseases.

- Knowledge and understanding: At the end of the course the student should demonstrate that he/she has acquired a broad knowledge of individual infectious diseases by describing the etiological, epidemiological, clinical picture, diagnostic, laboratory and radiological aspects, differential diagnosis, active and passive prophylaxis and therapy. He/she should also know the pathophysiological and immunological processes underlying individual infectious diseases.

- Applying knowledge and understanding: Upon completion of the course, the student, with complete autonomy, should be able to recognize the clinical picture characteristic of individual infectious diseases.

- Making judgements: At the end of the course the student, through the collected anamnestic information, laboratory tests and radiological findings should be able to recognize/distinguish individual infectious diseases.

- Communication skills: At the end of the course, the student will be expected to communicate what has been learned clearly, expounding the information in a logical and coherent sequence, with appropriate technical language using correct terminology.

- Learning skills: At the end of the course the student, on the basis of the cultural elements acquired, should be able to expand his or her knowledge and keep up to date by drawing independently on texts, scientific articles and online platforms.

## 5. prerequisites

Knowledge is required of elements of: organic chemistry (the macromolecules of biological interest: proteins, carbohydrates, lipids, nucleic acids), cell and molecular biology (structure of the cell, regulation of major life functions), normal human anatomy, histology, physiology, general pathology, laboratory medicine, microbiology. In particular, for microbiology, knowledge of the characteristics of individual pathogens (bacteria, viruses, fungi, protozoa, worms), bacterial, viral, and fungal isolation techniques, the diagnostic characteristics of each pathogen is required. Elements of epidemiology and statistics are also required.

## 6. TEACHING METHODS

The didactics of teaching includes: frontal theoretical lectures and autonomous and guided professionalizing activities of students divided into small groups. The face-to-face lectures make use of classical aids represented by images and/or videos and will be delivered by the lecturers to all students. For the professionalizing activity, students will access the facilities of the Infectious Diseases Clinic (Wards, Outpatient and Day Hospital, Integrated Infection Counseling Unit) where under the guidance of the lecturers in small groups clinical cases of infectious interest will be presented. These clinical cases, to the extent possible, will mirror the lectures given to students during the infectious diseases course. Since all lecture slides will be uploaded to the blackboard platform, the student will be able to submit questions about them to the lecturer.

- Knowledge and understanding: During lectures, lecturers explain to students the characteristics of infectious diseases, emphasize the peculiar aspects of these, and also try to establish correlations with other disciplines, in particular: microbiology, epidemiology, chemotherapy and hygiene. The student is encouraged to develop and improve his or her observational, comparative and deductive skills, qualities that will not only be useful in passing the exam, but will be fundamental to performing to the best of one's ability in the future medical profession.
- Applying knowledge and understanding : Throughout the lectures, students are encouraged to participate actively, stimulating their observation and deduction skills and soliciting questions with requests for clarification. This mode is applied even more distinctly in the course of the professionalizing activity, where the lecturer has a direct relationship with each student, having the opportunity to respond immediately to questions posed from time to time in relation to the clinical cases under discussion (problem solving).
- Making judgements: Particularly significant is the bed-side activity in the course of the professionalizing activity in small groups as the information presented in a systematic way during the frontal lectures, finds practical feedback in the clinical cases under discussion.
- Communication skills: Students are asked to ask questions and give answers to questions posed during both the lectures and the practicum activity. If it then becomes apparent that the language is incorrect in terms of terminology and description of what was observed, the lecturer corrects by suggesting the correct way of expressing the concept so as to develop in the student an appropriate technical/scientific language that is a fundamental tool for the future profession.
- Learning skills: The lectures delivered during the course are explanatory of the main aspects related to the topics listed in the syllabus. However, students are encouraged to explore these contents in depth through the use of textbooks, e-learning, or other aids available online and invited to propose doubts and/or questions at the end of the lecture or by requesting a personal appointment with the lecturers.

## 7. OTHER INFORMATIONS

### ***Elective Teaching Activities:***

Additional educational offerings are foreseen for the in-depth study of some specific contents of the teaching, through Seminars and Monographic Courses whose titles and implementation will also depend on the specific request of the students that may occur during the delivery of the Infectious Diseases course. A course is currently active (cod MG0571): “Infezione da HIV/HBV/HCV e sifilide in Donne in Et  fertile: Problemi diagnostici e terapeutici”.

It is expected that students, upon their request, will attend the Departments, Outpatient Clinic/Day Hospital, Integrated Infectious Diseases Consultation Unit (UICU) afferent to the Infectious Diseases Clinic. In particular, students who will apply for thesis in Infectious Diseases will also have access to the Laboratory and follow, learning the general techniques, clinical trials developed in the Clinic. The annual internship determines the acquisition of 1 CFU.

Lecturers are available for individual interviews with students, to be scheduled outside class hours, aimed, for example, at clarifying problematic aspects related to the study of the theoretical

program.

## 8. METHODS FOR VERIFYING LEARNING AND FOR EVALUATION

Verification of student learning is conducted through an examination that consists of an oral interview with questions designed to test mastery of knowledge about the Infectious Diseases topics presented in the lectures and/or found in the course syllabus.

The grade will be expressed in thirtieths. The maximum mark (30/30) will be awarded in cases where all the evaluation parameters outlined below are fully satisfied (according to the so-called Dublin Descriptors).

- Knowledge and understanding: Through the oral examination, the student will be able to demonstrate that he/she has acquired adequate knowledge related to infectious diseases in all its features with particular regard to etiology, epidemiology, clinical picture, laboratory and radiological diagnostics, aspects of active and passive prophylaxis, and therapy.
- Applied knowledge and understanding : In the course of the interview, the examiner should verify that the student has acquired adequate skill in bed-side recognition of individual infectious diseases and that, in describing them, he/she has a correct exposition of content using appropriate technical language.
- Making judgements: During the examination test, the student should demonstrate that he/she has acquired, as a result of the lectures and the professionalizing activity in small groups, an evaluative autonomy of judgment in distinguishing individual infectious diseases and the peculiar aspects of them.
- Communication skills: During the oral examination, the language used by the student will provide the examiner with the ability to assess the student's exposition and logical integration of the content learned as well as the appropriateness of the scientific terminology acquired.
- Learning skills: During the oral examination, the examiner will assess whether the learning of knowledge has been sufficiently thorough and critically guided, as well as to appreciate whether the student has also conducted in-depth personal work.

## 9. program

The program will be structured according to 3 macro areas that include:

1. Infectious diseases

2. Tropical diseases
3. Clinical parasitology

For each of these three macroareas, the diseases of greatest epidemiological impact and clinical relevance as well as of greatest observation in both community and hospital medicine have been selected below. For each individual infectious disease (without being further declined in the list below) the following aspects will be considered:

Etiology, Pathogenesis, Pathophysiology, Epidemiology, Clinical Picture, Laboratory Diagnostics, Radiological Diagnostics, General Principles of Therapy, Active and Passive Prophylaxis.

With regard to **Infectious Diseases (Module 1)**, the following will be covered:

- Sepsis: general characteristics of sepsis, origin of sepsis; pathogenesis: new classification criteria with special emphasis on septic shock and multi organ failure
- Infective endocarditis on native valve and on prosthetic valve, cardiac device infections.
- Salmonellosis: typhoid fever, paratyphi and minor salmonellosis
- Brucellosis: acute, chronic and organ form
- Bacterial and viral pneumonias: alveolar and interstitial forms, pneumococcal pneumonia, Mycoplasma pneumonia, Legionella pneumonia, viral pneumonias
- Bacterial and viral meningitis: cloudy CSF meningitis, clear CSF meningitis, meningococcal meningitis, pneumococcal meningitis, hemophilus meningitis, viral meningitis, chronic meningitis, and rarer forms of meningitis (e.g., by WNV)
- Viral encephalitis: HSV encephalitis, encephalitis related to specific geographic areas, sporadic encephalitis.
- Rabies
- Infectious diarrheas: diarrhea from bacteria, protozoa, Clostridium difficile diarrhea
- Viral hepatitis: hepatitis from viruses A, B C, Delta, E
- Exanthematous diseases: measles, rubella, varicella, scarlet fever, other exanthematous forms of viral nature
- Diphtheria
- Tetanus
- Botulism
- Leptospirosis
- Tuberculosis: clinical features of latent tuberculosis, pulmonary and extra-pulmonary clinical forms
- Influenza
- Adenovirus diseases
- Enterovirus diseases (ECHO, Coxsackiae)

- Poliomyelitis
- Epidemic parotitis
- Herpes virus diseases (Herpes Simplex, Cytomegalovirus, EBV, Varicella Zoster)
- Nosocomial infections
- Urinary infections
- HIV disease
- Rickettsiae and Chlamydiae diseases
- Leishmaniasis
- Toxoplasmosis
- Lyme disease
- Emerging viral diseases
- COVID-19

With regard to **Tropical Diseases (Module 2)** the following will be covered:

- Cholera
- Leprosy
- Yellow fever
- Dengue and hemorrhagic fevers
- Malaria
- Amoebiasis
- Trypanosomiasis
- Schistosomiasis
- Filariasis
- Problems related to tropical disease (migration, tourism, labor)

With regard to **Clinical Parasitology (Module 3)** the following will be covered:

- Protozoan Diseases: Giardiasis
- Elminth disease: Ascariidiosis, Oxyuriasis, Trichinosis, Ancylostomiasis, Teniasis, Hydatidosis

The following aspects will be addressed for the professionalizing activity:

1. Diagnostic procedures and treatment of clinical cases of infectious pathology
2. Knowing how to identify infectious diseases that require isolation and knowing the elements that indicate the need for isolation and taking appropriate preventive measures
3. Participate in the antibiotic therapy decision-making algorithm
4. Assisting counselling for those travelling to tropical countries (malaria prophylaxis and vaccinations) and preparing for clinical case management in resource-limited countries
5. Attend counseling in suspected HIV infection and assist in outpatient follow-up of person with HIV infection

6. Assist in prescribing antiretroviral therapy in people with HIV infection
7. Venous sampling for blood culture
8. Assist with or alternatively discuss indications and procedures related to diagnostic rachicentesis
9. Assist or alternatively discuss indications and procedures related to bronchoscopy with broncholavage
10. Assist in prescribing therapy for viral hepatitis in outpatients