UNICAMILLUS

Degree in Medicine and Surgery

Integrated teaching: **Systematic Pathology III**
SSD: MEDS-09/B, MEDS-05/A, MEDS-09/C, MEDS-10/B
Professor responsible: **Raffaella Pisapia**
Total CFU: **10**

Module: **Blood Diseases**
SSD: **MEDS-09/B**
Professor: **Giuseppe Sconocchia** e-mail: giuseppe.sconocchia@unicamillus.org
CFU: **3**

Module: **Internal medicine**
SSD: **MEDS-05/A**
Professor: **Filomena Pietrantonio** e-mail: filomena.pietrantonio@unicamillus.org
CFU: **1**

Module: **Rheumatology**
SSD: **MEDS-09/C**
Professor: **Chiara Scirocco** e-mail: chiara.scirocco@unicamillus.org
CFU: **2**

Module: **Infectious diseases**
SSD: **MEDS-10/B**
Professor: **Giuseppe Ippolito** (2 CFU) e-mail: giuseppe.ippolito@unicamillus.org

Professor: **Raffaella Pisapia** (2 CFU) e-mail: raffaella.pisapia@unicamillus.org
CFU: **4**

PREREQUISITES

Although there are no mandatory prerequisites, it is necessary to have knowledge of microbiology, pharmacology, as well as basic immunology and public health. Moreover, basic concepts of cell biology, biochemistry, physiology, and anatomy of the main organs and systems and of the musculoskeletal system are required. In addition, it is better to have rudiments of laboratory methods used for diagnostic and prognostic purposes in the context of hematological disorders and inflammatory disorders.

LEARNING OBJECTIVES

Among the aims of the course, there is the understanding of hematopoietic and lymphoid systems and its physiopathological disorders. Knowledge of the main hematological disorders is also required, such as anemia and clonal hematopoiesis (ARCH, CHIP, ICUS CCUS and IDUS), as well as, oncohematological disorders such as myelodysplastic syndromes, acute and chronic myeloid leukemias, myeloproliferative disorders, lymphoblastic leukemia and lymphoma.

Among the fundamental objectives is also the knowledge of clinical methodology and of the main non-communicable diseases.
Moreover, the aim of the lessons is to give the students the ability to recognize the clinical presentation, epidemiology, course and prognosis of main rheumatic diseases, among which

autoimmune and autoinflammatory conditions.

A further aim of the course is to provide students the knowledge of microorganism-host interactions including infections, infectious diseases, as well as colonization, deriving from this interaction. This course will also explain the fundamentals for applying appropriate diagnostic procedures to identify the presence of microorganisms and their impact on the host and will enable students to recognize the clinical presentation, epidemiology, clinical presentation and course, and prognosis of the main infectious diseases. Moreover, the course will introduce the pharmacological properties of the main anti-infective substances, and the proper treatment of the main infectious diseases. The teachers will introduce the main diseases with an infective etiology, giving the students elements of epidemiology, pathophysiology, differential and laboratory diagnosis and clinical-therapeutic management. A particular overview of emerging and re-emerging infections will be treated. At the end of the course, the student will also know the principles of the control and prevention of infections in the community and healthcare settings, in a "One Health" approach.

LEARNING OUTCOMES

Knowledge and understanding

At the end of the course the student will be able to:

- Recognize the main components of the hematopoietic system
- Distinguish the main disorders affecting the lymphohematopoietic system
- Identify the main causes of hematological and oncohematological disorders
- Manage the differential diagnosis of the main hematological and oncohematological disorders
- Know the main therapeutic strategies for the management of the hematological patient
- Know and explain the basis of clinical methodology
- Know and explain the global burden of diseases
- Know and explain cardiovascular diseases
- Know and explain the basis of the stroke
- Know and explain Pulmonary Obstructive Disease (COPD)
- Know and explain Diabetes.
- Discuss the pathophysiology of the main rheumatic diseases and their distinctive clinical picture as well as identify the indications for laboratory tests and their interpretation
- Access and evaluate medical information relevant to the topics objects of this course.
- Know the classification of the main bacterial, viral and protozoan infections
- Describe the epidemiological principles of diseases, with special attention to the different geographical contexts, including the epidemiological chain of transmission
- Describe the differences between contaminations, colonization, infection, infectious disease
- Recognise the most common community-acquired and healthcare-associated infections
- Describe the elements for the i n f e c t i o n p r e v e n t i o n and control, and the principles of the antimicrobial stewardship
- Understand the most relevant infections in immunocompromised patients (HIV and non-HIV)
- Know the emerging and re-emerging infectious diseases
- Know and explain the basis of clinical methodology, diagnostics and immune responses
- Know and describe the main therapeutic classes for prevention and treatment
- Describe isolation and infection control measures

Applying knowledge and understanding

At the end of the course the student will be able to:

- Use the knowledge acquired for the in-depth study of aspects relating to the specific field to which the student will dedicate himself in the professional activities
- Cooperate with other healthcare providers in making decisions regarding diagnosis, treatment, and

monitoring patient's conditions.
- Use laboratory testing in order to improve clinical outcomes at greatly reduced costs.
- Understand and explain the risk factors and the pathophysiology of infectious, rheumatic, hematologic and other non-transmissible disorders such as diabetes.

Communication skills

At the end of the course the student will be able to:
- Know and correctly use proper scientific language aimed at a correct and rigorous scientific communication.
- Have knowledge of the procedures to inform patients, contacts on transmission risks; as well as health authorities for mandatory notifications of infectious diseases.

Making judgements

At the end of the course the student should be able to make general assessments of the topics covered.

The student will be also able to independently develop the logical procedures that lead to a differential diagnosis and, at the same time, to critically analyze the data supporting a specific diagnosis

COURSE SYLLABUS

Blood Diseases
- Bone marrow niche
- The hematopoietic stem cell
- Hematopoiesis
- Anemias
- Clonal haematopoiesis (ARCH, CHIP, ICUS, CCUS and IDUS)
- Myelodysplastic syndromes
- Acute myeloid leukemia
- Myeloproliferative disorders
- Therapy-related myeloid neoplasms
- Acute lymphoblastic leukemia
- Lymphoma

Internal Medicine
- Introduction to Non-Communicable Diseases and clinical methodology
- Global burden of diseases
- Impact of the Covid Pandemic on Chronic Disease Patients
- Digital Health
- Cardiovascular diseases with particular attention to prevention programs
- The pathophysiological bases of stroke cerebri, risk factors and clinical pictures
- Respiratory Failure and Pulmonary Obstructive Disease (COPD)
- The bases of metabolic diseases with particular reference to Diabetes Mellitus

Rheumatology

classification of the rheumatic diseases
rheumatological physical examination
synovial fluid
autoantibodies and laboratory in Rheumatology
definition, pathogenesis, clinical manifestations and treatment of rheumatoid arthritis, osteoarthritis, Polymyalgia Rheumatica, spondyloentesoarthritis, reactive arthritis, septic arthritis, gout and

pseudogout, fibromyalgia, rheumatic fever, systemic lupus erythematosus, Sjogren's disease, Systemic Sclerosis, myositis, systemic vasculitis, Behcet's disease, IgG4 related disorders, autoinflammatory diseases, anti-phospholipid syndrome, Adult Onset Still Disease, Osteoporosis. Ultrasound and capillaroscopy

Infectious disease

General considerations on Infectious Diseases
- Concepts of colonization, infection, infectious disease
- Modes of transmission
- Mechanisms of microorganism-host interaction
- The body's defenses against infectious agents
- Diagnostic work up and basics on treatment of infectious diseases
- Guide to infection prevention and control measures in the community and healthcare settings
- Globalization and infectious disease

Infectious syndromes
- acute febrile neurological syndrome
- acute febrile respiratory syndrome
- Fever syndrome returning from the tropics
- Icteric syndrome
- Febrile dermatological syndromes including exanthematous diseases
- Generic febrile syndromes including sepsis, bloodstream infections and endocarditis
- Gastrointeritic syndromes

Specific topics
- Community acquired infections
- Healthcare associated infections
- Infections in the immunocompromised patient
- Emerging and re-emerging infections
- Principles for the use of antimicrobials, including antimicrobial stewardship
- Use of laboratory and microbiological data in the diagnosis and management of infectious diseases
- Proper use of epidemiological data (surveillance systems, outbreak, etc.)

Internal medicine
1. Introduction to Non Communicable Diseases and clinical methodology
2. Global burden of diseases
3. Impact of the Covid Pandemic on Chronic Disease Patients
4. Digital Health
5. Cardiovascular diseases with particular attention to prevention programs
6. The pathophysiological bases of stroke, risk factors and clinical pictures
7. Respiratory Failure and Pulmonary Obstructive Disease (COPD)
8. The bases of metabolic diseases with particular reference to Diabetes Mellitus.

INTERNSHIP OBJECTIVES

HEMATOLOGY

- Attendance at wards and outpatient clinics in support of clinical mentors;
- Acquisition of practical knowledge aimed at performing a focused clinical examination of the hematology patient;
- Support and observation of clinical mentors during diagnostic and therapeutic procedures practiced

in a hematology department: bone marrow aspirate, bone biopsy, and lumbar puncture;
- Acquisition of practical knowledge of the clinical significance of the main laboratory tests of hematological diseases;
- Acquisition of the first rudiments of light microscopy for morphological identification of blood cells;
- Acquisition of practical knowledge on the diagnostic, prognostic and therapeutic course of the hematological patient;
- Acquisition of practical knowledge on the impact of chemotherapy on the patient's clinical course during hematologic reconstitution.

RHEUMATOLOGY

- Perform a rheumatologic internist history and rheumatologic physical examination.

CLINICAL PRACTICE IN INFECTIVOLOGY

- Clinical infectious syndromes: Localized infections, Sepsis and septic shock; Infectious endocarditis; Acute infectious enteritis and food poisoning;
- Infectious hepatitis; Urinary tract infections; Infectious osteomyelitis; Meningitis and meningoencephalitis.
- Diseases from bacteria and viruses.
- Diseases from fungi, protozoa and helminths.
- Principles of therapy: antibacterial, antiviral, antifungal and antiparasitic.

COURSE STRUCTURE

The course consists of a series of lessons. Students will engage in interactive discussions of clinical scenarios and cooperative learning activities. As part of the 'Professor for one day' programme, students can voluntarily commit to preparing a lesson on a specific topic.
Teachers will use didactic tools such as PowerPoint presentations containing explanatory diagrams, illustrations and images.
Additional optional activities: students have the option of attending seminars, undertaking research internships and attending monographic courses.
Attendance is mandatory.

COURSE GRADE DETERMINATION

The exam consists of a multiple choice written assay (4 or 5 possible answers, only one correct) with the option of oral exam. The evaluation will be expressed in 30/30. The student must obtain the minimum score (18/30) in each module to pass the exam. Hence, the whole examination will be evaluated as it follows:

- ➢ Insufficient: severe poor knowledge of the subject, very limited skill in the analysis of specific items.
- ➢ 18-20: knowledge of the subjects of sufficient quality characterized by frequent imperfections. Analysis and reasoning skills of sufficient quality.
- ➢ 21-23: standard knowledge of the specific subject; analysis and reasoning skill of acceptable quality.
- ➢ 24-26: good knowledge of the subjects and good analysis and reasoning skills; topics are expressed in a rigorous way.
- ➢ 27-29: very good knowledge of the specific scientific subjects, valid analysis and reasoning skills, significant skill in making judgements.

➢ 30-30L: outstanding knowledge of the specific knowledge of the scientific tasks. Exceptional analysis, reasoning and making judgments skills.

OPTIONAL ACTIVITIES

In addition to the above reported teaching activity, the student will have the option to attend seminars, research internships, department internships and monographic courses.

READING MATERIALS

Blood Diseases

- Hematology: pathophysiology, diagnosis and treatment. Sante Tura, Michele

Cavo e Pier Luigi Zinzani. case editrice Esculapio.

- The slides shown during the course will be made available to the student and will constitute the support material to guide the student towards the correct study method.

Internal Medicine

- Kaspi, Haucer, Fauci, Longo, Jameson, Lo Scalzo. Harrisons Manual of Medicine, latest edition Edition (Harrison Manual of Medicine) (English Edition). Available also the PocketManual.

  McGraw-Hill Education / Medical; latest Edition (2016). ISBN 978-0-07-182852-9

- Fred F. Ferri. Practical Guide to the care of the Medical Patient. Mosby Elsevier (latest Edition)

  2014. ISBN: 978-1-4557-4459-6

- Teaching material provided by the teacher during the lessons.

Rheumatology

- Harrison's Rheumatology, latest edition
- Harrison's Principle of Internal Medicine, latest edition

- The slides shown during the course will be made available to students and will serve as supporting material to guide them

Infectious Diseases

- The slides shown during the course will be made available to students and will serve as supporting material to guide them towards the correct study method.
- The recommended book for studying infectious diseases and preparing for the exam is: The Merck Manual. Professional version, section 'Infectious Diseases' (English edition). Sections 1–12 are available at: https://www.msdmanuals.com/professional/searchresults?query=infectious%20diseases
- Scientific papers published by international journals on the topics covered will be made available upon request.