Degree in Medicine and Surgery

Course: S**ystematic Pathology III**
Credits: **10**

Module: **Blood Diseases**
SSD course: **MED/15**
Credits: **2**
Professor's name:
Prof. Emiliano Fabiani e-mail: emiliano.fabiani@unicamillus.org

Module: **Internal Medicine**
SSD course: **MED/09**
Credits: **2**
Professor's name:
Prof. Filomena Pietrantonio e-mail: filomena.pietrantonio@unicamillus.org

Module: **Rheumatology**
SSD course: **MED/16**
Credits: **1**
Professor's name:
Prof. Roberta Priori e-mail**:** roberta.priori@unicamillus.org

Module: **Infectious Diseases**
SSD course: **MED/17**
Credits: **5**
Professor's name:
Prof. Giuseppe Ippolito (3 CFU) e-mail: giuseppe.ippolito@unicamillus.org
Prof. Nicola Petrosillo (2 CFU) e-mail: nicola.petrosillo@unicamillus.org

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PREREQUISITES

Although there are no mandatory prerequisites, it is necessary to have knowledge of microbiology, pharmacology, as well as, rheumatology.

Moreover, basic concepts of cell biology, biochemistry, physiology, and anatomy 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 haematological disorders.

LEARNING OBJECTIVES

Among the aims of the course, there is the understanding of hematopoietic and lymphoid system and its physiopathological disorders. Futhermore, knowledge of the main haematological 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.

In addition, students will know the main non communicable diseases and the basis of clinical methodology.

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.

Another aim of the course is to provide students the knowledge of microorganism-host interactions and the clinical situations, including infections, infectious diseases, colonization, deriving from this interaction. This course will give also the basics for applying proper diagnostic procedures to identify the presence of microorganisms and their role towards the host. Moreover, the course will introduce the pharmacological properties of the main anti-infective substances, and the proper treatment of the infectious diseases.

During the course, the teacher will introduce the main diseases with an infective etiology, giving the students elements of epidemiology, pathophysiology, differential and laboratory diagnosis, and clinical-therapeutical 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 haematological and oncohematological disorders
- Manage the differential diagnosis of the main hematological and oncohematological disorders
- Know the main therapeutic strategies for the management of the haematological 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 Identify the indications for laboratory tests and interpret the results
- 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
- Know the most common community acquired infectious diseases
- Know the most common healthcare associated infectious diseases
- Describe the elements for the prevention and control of infection, and the principles of the antimicrobial stewardship
- Know the most important infections in the immunocompromised patient (HIV and non-HIV)
- Know the emerging and re-emerging infectious diseases
- Understand the diagnostics for pathogens and immune response
- 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 activity
- cooperate with other healthcare providers in making decisions regarding diagnosis, treatment, and monitoring patient's conditions, using laboratory testings in order to improve clinical outcomes at a greatly reduced costs.
- understand and explain the risk factors and the pathophysiology of infectious diseases

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

- Know and correctly use proper scientific language aimed to 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 microbiological data supporting a 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

- 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

Infectious Diseases

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 diseases

Specific topics

- Community acquired infecions
- 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.)

COURSE STRUCTURE

The course is divided into lectures. The students will have interactive discussion of clinical scenarios, as well as, cooperative learning. The teachers use didactic tools such as powerpoint presentation with explanatory diagrams, illustrations and images to describe the pathologies. Attendance is mandatory.

COURSE GRADE DETERMINATION

The exam consists of an oral test. The evaluation will be expressed in 30/30.

During the oral exam, the examining Committee will assess the student's ability to apply the knowledge and ensure that the learned skills are enough to support and solve diseases problems.

Finally, active participation during lectures, as well as, making judgments, communication skills and learning skills as in the Dublin descriptors will be assessed.

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, 19th Edition (Harrison's Manual of Medicine) (English Edition). Available also the Pocket Manual. McGraw-Hill Education / Medical; 19th Edition (2016). ISBN 978-0-07-182852-9
- Fred F. Ferri. Practical Guide to the care of the Medical Patient. Mosby Elsevier (9th 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

Infectious Diseases

- Mandell, Douglas and Bennett's Infectious Disease Essentials, by John E. Bennett MD (Author), Raphael Dolin MD (Author), Martin J. Blaser MD (Author)-Elsevier
- Scientific papers published by international journals on the topics covered will be made available.