PATOLOGIA GENERALE, BIOCHIMICA CLINICA E MICROBIOLOGIA

7 CFU - 1° Semester

Teaching Staff

ANTONIO ARCIDIACONO - Module General Pathology - MED/04 - 2 CFU
Email: a.arcidiacono@unict.it
Office: Laboratorio Malattie Metaboliche - OVE-Policlinico - Pres. G. Rodolico. ED 9
Phone: 095-3782963
Office Hours: Da concordare tramite e-mail

VITTORIO CALABRESE - Module Clinical Biochemistry - BIO/12 - 3 CFU
Email: calabres@unict.it
Office: Dipartimento di Scienze Biomediche e Biotecnologiche, Torre Biologica "F. Latteri", Est Piano 4
Phone: 095 4781151
Office Hours: previo appuntamento calabres@unict.it

ADRIANA GAROZZO - Module General and clinical microbiology - MED/07 - 2 CFU
Email: agar@unict.it
Office: Dipartimento di Scienze Biomediche e Biotecnologiche - Sezione di Microbiologia - Torre Biologica (Torre SUD 3° piano) Via Santa Sofia n. 97 - 95123 CATANIA
Phone: 0954781236
Office Hours: Martedì dalle 12:00 alle 13:00 | Giovedì dalle 12:00 alle 13:00 Oltre la data di ricevimento è possibile concordare giorni ed orari differenti previa richiesta per e-mail.

LEARNING OBJECTIVES

- **General Pathology**
  Provide all the scientific informations in the field of general pathology suitable for the preparation of the student for those materials which will be used after the completion of training in the dietary field

- **Clinical Biochemistry**
  The course is designed to provide students with a good foundation of knowledge in all aspects of Clinical Biochemistry. Introducing the fundamentals of instrumentation and methodology in the clinical chemistry and biochemistry laboratory medicine, lectures will cover urinalysis testing procedures and associated disease entities, as well as analysis of other body fluids. Clinical testing using automated and manual methods, measurement of pancreatic function and intestinal absorption, renal and liver function, enzymes, electrolytes, blood gases, lipids, toxicology, urinalysis, endocrinology, neurological, dysmetabolic, inflammatory and cardiovascular diseases.

- **General and clinical microbiology**

  The student must learn the biological and pathogenic characteristics of microorganisms that play a role in human pathology, with reference to bacteria, viruses and fungi. He must acquire appropriate knowledge on the relationships between microorganisms and host in normal and pathological conditions, identify the transmission pathways, know the characteristics, the activity, the mechanism of action and resistance of the main antimicrobial drugs and vaccines. The student must also know the main methods for the cultivation and identification of microorganisms.

  The course also aims to illustrate the various methods of prevention of microbial infections and the main causes of infection related to specific professional activity.

COURSE STRUCTURE

- **General Pathology**
  lectures as per calendar

- **General and clinical microbiology**
  Traditional lectures, with the support of slides and educational videos of some theoretical-practical teaching topics (the films will be available on the Studium page). Students during one of the last lessons will have the opportunity to view some practical activities carried out in the laboratories of Microbiology.

DETAILED COURSE CONTENT

- **General Pathology**
  -Introduction to General pathology

  -Concept of homeostasis and disease

  -Causes of phisical diseases

  -Causes of chemical diseases

  -Causes of biological diseases

  -Cellular pathology

  -Pathology of the extracellular matrix

  -Genetic pathology

  -Inflammation: classification; types of exudate; chemical mediators of inflammation; chronic inflammation and granulomas; reparative phenomena

  -The fever

-**Aterosclerosis**

- **Clinical Biochemistry**

1) The use of laboratory data in clinical practice
2) Analysis of Urine
3) Biochemistry of nutrition
4) Liver function and Hepatitis tests

5) Blood cell count

6) Diabetes mellitus
7) Hypoglycemia
8) Free radicals in the physiology and in the pathology
9) Metabolism of ethanol and the pathology of alcoholism

10) Tumor markers
11) Notes on antiaging medicine.

- **General and clinical microbiology**

1. Essential characteristics and differences of bacteria, viruses, fungi, protozoa and other parasites known to infect humans.
2. The pathogenic mechanisms of microorganisms, microorganism-host relationships, basic concepts in the immune response.
3. The various possibilities of infection and spread of infection. Alimentary infections induced by microorganisms
4. The organization of the bacterial cell: structure and function of the cellular components and bacterial metabolism
5. Mechanisms of bacterial pathogenesis: role of bacteria in disease
6. Characteristics of fungi
7. Mechanisms of fungal pathogenesis
8. Characteristics of virus and their replication
9. Mechanisms of viral pathogenesis. Types of viral infection: acute and persistent infection
10. The antimicrobial chemotherapy: the main characteristic of principal groups of antimicrobial compounds and their mechanisms of resistance
11. Vaccines
12. General principles of laboratory diagnosis of infectious diseases
13. General principles of sterilization, disinfection, and antisepsis
14. Bacterial infections associated with gastroenteritis: *Helicobacter pylori, Enterobacteriaceae, Vibrio. Food-borne diseases and zoonosis*
15. Viral etiology of alimentary infections: Noroviruses, Rotaviruses, Adenoviruses
16. Alimentary infections induced by protozoa and helminths
17. Causative agents of alimentary toxicoses
18. Mycotoxin and mycotoxicosis
19. Human hepatitis viruses (HAV, HBV, HCV, HDV, HEV)

TEXTBOOK INFORMATION

- **General Pathology**
  Pontieri: Patologia Generale

  Robbins: Patologia Generale

  Rubin: Patologia generale

- **Clinical Biochemistry**
  Medicina di Laboratorio, G. Federici (Autore), – Mc GrawHill Medicina di laboratorio.

  Medicina di Laboratorio. La diagnosi di malattia nel laboratorio clinico, M. Laposata (Autore) - Piccin

  Medicina di Laboratorio. Logica e patologia clinica, I. Antonozzi, E. Gulletta (Autori) - Piccin

  Medicina dell'Aging e dell'Antiaging. V. Calabrese et al. (Autori) - Edra

  Nutrigenomica e Epigenetica. V. Calabrese et al. (Autori) - Edra

- **General and clinical microbiology**
  1. Harvey R. H., Champe P.C., Fisher B. D., Le basi della Microbiologia, con approfondimenti clinici - Ed. Zanichelli
  2. Cevenini R.. Sambri V., Microbiologia e microbiologia clinica, Per i Corsi di Laurea in professioni sanitarie – Ed. Piccin

  All students can use didactic material downloadable from the Studium page at the following link: http://studium.unict.it/dokeos/2018/courses/10463/