



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Medicina di Precisione in area Medica, Chirurgica e Critica		
ACADEMIC YEAR	2020/2021		
BACHELOR'S DEGREE (BSC)	DENTAL HYGIENE		
INTEGRATED COURSE	MICROBIOLOGY AND GENERAL PATHOLOGY - INTEGRATED COURSE		
CODE	05209		
MODULES	Yes		
NUMBER OF MODULES	2		
SCIENTIFIC SECTOR(S)	MED/04, MED/07		
HEAD PROFESSOR(S)	GIAMMANCO GIOVANNI	Professore Ordinario	Univ. di PALERMO
OTHER PROFESSOR(S)	GIAMMANCO GIOVANNI	Professore Ordinario	Univ. di PALERMO
	CANDORE GIUSEPPINA	Professore Ordinario	Univ. di PALERMO
CREDITS	6		
PROPAEDEUTICAL SUBJECTS	18973 - BIOLOGY AND PHYSIOLOGY- INTEGRATED COURSE		
MUTUALIZATION			
YEAR	1		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	CANDORE GIUSEPPINA Monday 12:00 14:00 Patologia generale - Corso Tukory 211 Wednesday 12:00 14:00 Patologia generale- Corso Tukory 211 GIAMMANCO GIOVANNI Wednesday 13:00 14:00 Dipartimento di Promozione della Salute, Materno-Infantile, di Medicina Interna e Specialistica di Eccellenza "G. D'Alessandro", Via del Vespro 133, 90127, Palermo, Piano 2°		

DOCENTE: Prof. GIOVANNI GIAMMANCO

PREREQUISITES	Basic knowledge of the following disciplines: general and organic chemistry, biochemistry, physics, biology, genetics.
LEARNING OUTCOMES	Knowledge and understanding To acquire the necessary skills to understand the etiology and pathophysiological mechanisms of diseases, the alterations of the structure, functions and control mechanisms of cells and systems. Knowledge of features of microorganisms and main pathogens affecting the oral cavity. Ability to use the technical language of these disciplines. The student must also have the basic information on the main diagnostic techniques, especially on molecular fields. The knowledge acquired in the course will represent the indispensable substrate for a correct clinical approach. The students will achieve the following objectives: Ability to apply knowledge and understanding Ability to recognize and apply the cognitive tools and the methodological approach of General Pathology for the scientific and rational practice of the profession. To demonstrate the ability to apply their knowledge and understanding of the main themes of oral microbiology. Making judgments To be able to evaluate independently the results of studies developed with the aim to clarify the pathogenesis and pathophysiology of diseases and etiology of infectious diseases. To acquire enough knowledge to critically analyze data. Communication skills Ability to explain easily and exhaustively the knowledge acquired. Ability to communicate with colleagues, healthcare professionals, patients, and their relatives. Ability of learning Ability to achieve a professional update using scientific publications of these disciplines. Attendance to meetings, congresses, and seminars.
ASSESSMENT METHODS	Oral exam. The candidate will have to answer at least four questions posed orally, at least two for each of the two modules, covering the different parts of the program, with reference to the recommended texts. The final assessment aims to evaluate whether the student has knowledge and understanding of the topics, has acquired the skills to interpret the notions and judge independently. The evaluation is expressed using a 30-point scale. ECTS grades: A – A+ Excellent (30-30 cum laude) - Grade descriptors : Excellent knowledge of teaching contents; students should show high analytical and synthetic capabilities and should be able to apply their knowledge to solve highly complex problems. ECTS grade: B Very good (27-29) - Grade descriptors: Good knowledge of the teaching contents and excellent language control; students should show analytical and synthetic skills and be able to apply their knowledge to solve problems of medium and, in some cases, even higher complexity. ECTS grade: C Good (24-26)- Grade descriptors: Good knowledge of teaching contents and good language control; the students should be able to apply their knowledge to solve problems of medium complexity ECTS grade: D Satisfactory (21-23)- Grade descriptors: Average knowledge of the teaching contents, in some cases limited to the main topic; acceptable ability to use the specific discipline language and independently apply the acquired knowledge. ECTS grade: E Sufficient (18-20) - Grade descriptors: Minimum teaching content knowledge, often limited to the main topic; modest ability to use the subject-specific language and independently apply the acquired knowledge. ECTS grade: F Fail (1-17) - Grade descriptors: Lack of an acceptable knowledge of the main teaching content knowledge; very little or no ability to use the specific subject language and apply independently the acquired knowledge. Exam failed
TEACHING METHODS	Lectures

MODULE MICROBIOLOGY AND CLINICAL MICROBIOLOGY

Prof. GIOVANNI GIAMMANCO

SUGGESTED BIBLIOGRAPHY

M. La Placa, PRINCIPI DI MICROBIOLOGIA MEDICA – Società Editrice Esculapio - XIV Edizione – 2014
M.T. Madigan, J.M. Martinko, D.A. Stahl, D.P. Clark, "BROCK - BIOLOGIA DEI MICRORGANISMI" – Vol. 1 e 2 - Casa Editrice Pearson – 2012
S. De Grazia, D. Ferraro, G. Giammanco "MICROBIOLOGIA E MICROBIOLOGIA CLINICA PER LE PROFESSIONI SANITARIE" - Casa Editrice Pearson Education Italia - 2017
M.P. Conte, F. Berlutti "MICROBIOLOGIA DEL CAVO ORALE" - Società Editrice ESCULAPIO - 2019

AMBIT	10346-Scienze dell'igiene dentale
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

Acquire a basic knowledge of the world of microorganisms, including their cellular and metabolic organization and their interactions. Know the microbial ecology of the oral cavity and the possible interactions between microorganism and host. Understand the mechanisms of action of the pathogenic microorganisms in general and of some important pathogens of the oral cavity in particular. Acquire the ability to correlate the microbiological knowledge with the practice of dental hygienist.

SYLLABUS

Hrs	Frontal teaching
2	Introduction to microbiology: the impact of microorganisms on humans and on the environment. The historical roots of microbiology. Microbial diversity: prokaryote and eukaryote microorganisms, viruses.
4	Structure and functions of the bacterial cell: morphology, aggregation, size; cell wall in Gram-positive and Gram-negative bacteria; cytoplasmic membrane; cytoplasm and essential cytoplasmic components; nuclear region and the chromosome; extracellular polymeric substances; flagella, fimbriae; spores and sporulation process.
4	Principles of genetics of microorganisms. Bacterial metabolism: energy production and molecular biosyntheses. Environmental factors influencing bacterial growth, the growth curve of a bacterial population, quantitative measure of microbial growth.
4	Relations between host and microorganisms, inter-microbial relationships, microbial ecology of the oral cavity, polymicrobial biofilms.
4	Main determinants of pathogenicity and virulence of microorganisms: adhesion factors, invasiveness, exoenzymes and microbial toxins. Description of the main pathogenic bacteria of dental interest.
4	General characteristics of viruses: biology, structure, replication cycle. Description of the main viral pathogens of dental interest.
2	General characteristics of fungi: the fungal cell, modes of reproduction, pathogenic role in humans. Description of the main fungal pathogens of dental interest.
2	Microbiology laboratory techniques: principles of isolation and identification of microorganisms.
2	Antimicrobial agents: general characteristics. Antimicrobial resistance in microorganisms.
2	Vaccines and immune sera.

MODULE
GENERAL PATHOLOGY AND ELEMENTS OF CLINICAL PATHOLOGY

Prof.ssa GIUSEPPINA CANDORE

SUGGESTED BIBLIOGRAPHY

GM Pontieri: Elementi di Patologia generale - IV ed. - Piccin, 2018
E Albi, FS Ambesi-Impimbato, F Curcio, B Moncharmont, A Palese - Le basi cellulari e molecolari della malattie (per le lauree triennali) - Idelson-Gnocchi, 2019

AMBIT	10338-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

To acquire the necessary skills to understand homeostatic mechanisms, the etiology and pathophysiological mechanisms of diseases. Basic information on the main diagnostic techniques

SYLLABUS

Hrs	Frontal teaching
2	To have a clear conception of homeostasis, disease, etiology and pathogenesis
2	Leucocytes: generation and morphology. Function in health and disease of lymphocytes, monocytes, neutrophils, eosinophils, basophils. Normal and pathological leucocytes cell count
6	Innate and adaptive immune response. cells and tissues of the immune system. Cytokines, Antigens, Antibodies, Complement system, , HLA and blood groups, Hypersensitivity reactions. Autoimmunity and Immunodeficiencies (basic knowledge)
3	Acute inflammation and vascular modifications. Cellular and plasmatic mediators: preformed and newly synthesized mediators. Cells involved in inflammation, Adhesion molecules, cellular migration, phagocytosis. Exudates.
3	Chronic inflammation: nonspecific and granulomatous repair, wound healing.
2	Electrophoresis of plasma proteins. Acute phase proteins in the monitoring of inflammatory response: CRP and ESR 6 Innate and adaptive immune response
2	Pathophysiology of body temperature: fever and hyperthermia. Pyrogens. Types of fever and pathophysiological significance
2	The adaptive responses: hypertrophy, hyperplasia, metaplasia, atrophy. Cell injury and death: necrosis and apoptosis.
6	Characteristics of benign and malignant neoplasms and nomenclature. Tumor progression and metastasis. Angiogenesis. Carcinogenic agents. Oncogenes and cancer suppressor genes. Elements of epidemiology.
2	Anemia and laboratory diagnosis of anemias. Iron deficiency anemia , anemia of chronic disease, megaloblastic anemias, thalassemia, hemolytic anemias due to both intra- and extracellular defects. Polycythemia