



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Promozione della Salute, Materno-Infantile, di Medicina Interna e Specialistica di Eccellenza "G. D'Alessandro"
ACADEMIC YEAR	2017/2018
BACHELOR'S DEGREE (BSC)	PREVENTION TECHNIQUES FOR THE ENVIRONMENT AND WORKPLACE
INTEGRATED COURSE	MICROBIOLOGY AND INFECTIOUS DISEASES - INTEGRATED COURSE
CODE	15174
MODULES	Yes
NUMBER OF MODULES	2
SCIENTIFIC SECTOR(S)	MED/17, MED/07
HEAD PROFESSOR(S)	GIAMMANCO GIOVANNI Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	GIAMMANCO GIOVANNI Professore Ordinario Univ. di PALERMO DI CARLO PAOLA Professore Associato Univ. di PALERMO
CREDITS	6
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	<p>DI CARLO PAOLA Tuesday 12:30 14:30 Day Hospital di Malattie Infettive, sito dietro aula Ascoli Thursday 9:00 12:00 U.O.C. di Malattie infettive</p> <p>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°</p>

DOCENTE: Prof. GIOVANNI GIAMMANCO

PREREQUISITES	Basic knowledge on the following disciplines: general and organic chemistry, biochemistry, physics, biology, genetics.
LEARNING OUTCOMES	<p>Knowledge and understanding: by the end of this course, students should have acquired knowledge of the structural and biological characteristics of microorganisms, of the interactions between microorganisms and host, and the characteristics of the main infectious diseases.</p> <p>Ability to apply knowledge and understanding: students should be able to apply their knowledge to the main themes of Microbiology and Infectious Diseases and be able to select and use appropriate approaches to particular problems in the field of infectious disease prevention, identifying their advantages and limitations.</p> <p>Autonomous judgement: students should be able to identify solutions to problems in the fields of the course disciplines through critical analysis of data in the international literature and case study analysis.</p> <p>Communication skills: students should be able to clearly present works they have carried out individually or in groups.</p> <p>Learning skills: students should be able to find pertinent data for professional update and training and be prepared for subsequent study levels (specialisation degree, Master courses etc.).</p>
ASSESSMENT METHODS	<p>Oral exam with evaluation expressed using a 30-point scale.</p> <p>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.</p> <p>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.</p> <p>The sufficiency threshold will be reached if the student shows knowledge and understanding of the issues at least in broad outline, and has application skills sufficient for solving simple practical cases; he must also have presentation and argumentative skills allowing the transmission of his knowledge to the examiner. Below this threshold, the examination will be insufficient.</p> <p>The more the candidate will be able to interact with the examiner with his argumentative and presentation skills, and the more his knowledge and application capabilities will go into detail on the subjects under evaluation, the more the judgement will be positive, according to the following scheme:</p> <ul style="list-style-type: none">- ECTS grade: A- A+ Excellent – Italian Grade: 30-30 cum laude Eccellente. <p>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.</p> <ul style="list-style-type: none">- ECTS grade: B Very good – Italian Grade: 27-29 Ottimo. <p>Grade descriptors: Very 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.</p> <ul style="list-style-type: none">- ECTS grade: C Good – Italian Grade: 24-26 Buono. <p>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.</p> <ul style="list-style-type: none">- ECTS grade: D Satisfactory – Italian Grade: 21-23 Discreto. <p>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.</p> <ul style="list-style-type: none">- ECTS grade: E Sufficient – Italian Grade: 18-20 Sufficiente. <p>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.</p> <ul style="list-style-type: none">- ECTS grade: F Fail – Italian Grade: 1-17 Insufficiente. <p>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.</p>
TEACHING METHODS	Lectures; preparation and discussion of a dissertation; presentation and discussion of works published in scientific journals.

MODULE MICROBIOLOGY

Prof. GIOVANNI GIAMMANCO

SUGGESTED BIBLIOGRAPHY

- M.T. Madigan, J.M. Martinko, D.A. Stahl, K.S. Bender – D.H. Buckley, "BROCK - BIOLOGIA DEI MICRORGANISMI", 14° edizione - Casa Editrice Pearson, 2016

- Tortora GJ, Funke BR, Case CL, "Elementi di microbiologia", Casa Editrice Pearson, 2008

- S De Grazia, D Ferraro, G Giammanco "MICROBIOLOGIA E MICROBIOLOGIA CLINICA PER LE PROFESSIONI SANITARIE" - Casa Editrice Pearson, 2017

AMBIT	10358-Scienze biomediche
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

To acquire a basic knowledge of the world of microorganisms, including their cellular, metabolic and genetic organisation. To know and understand the mechanisms of the pathogenic action of microorganisms in general and of some important pathogens in particular. Students will learn some applications of microbiology, focusing in particular on methods for the microbiological control of food, the environment, surfaces and the air.

SYLLABUS

Hrs	Frontal teaching
1	Introduction to microbiology: the impact of microorganisms on humans and on the environment.
1	The historical roots of microbiology.
1	Microbial diversity: prokaryote and eukaryote microorganisms, viruses.
3	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	Main determinants of pathogenicity and virulence of microorganisms: adhesion factors, invasiveness, exoenzymes and microbial toxins.
3	Characteristics of the main pathogenic bacteria.
4	General characteristics of viruses: biology, structure, replication cycle. Characteristics of the main pathogenic viruses.
2	General characteristics of fungi: the fungal cell, modes of reproduction, pathogenic role in humans. Major fungi of medical interest.
3	Antimicrobial agents: general characteristics. Types of vaccines.
4	Culture media, microbiological laboratory techniques: principles of isolation and identification of bacteria; techniques for the microbiological control of food, the environment, air and surfaces.
4	Culture media, microbiological laboratory techniques: principles of isolation and identification of bacteria; techniques for the microbiological control of food, the environment, surfaces and the air.

**MODULE
INFECTIOUS DISEASES**

Prof.ssa PAOLA DI CARLO

SUGGESTED BIBLIOGRAPHY

RECOMMENDED READING Material supplied by the lecturer and available on official websites recommended by WHO.

AMBIT	10362-Scienze medico-chirurgiche
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INDIVIDUAL STUDY (Hrs)	45
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COURSE ACTIVITY (Hrs)	30
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EDUCATIONAL OBJECTIVES OF THE MODULE

To know the causes of the main infectious diseases, including emerging and re-emerging diseases, the relationships between microorganism and host and the main diagnostic tools. To identify the settings and categories of subjects particularly at risk of contracting infectious diseases. To know and apply principles of prevention of infection risk, taking into account ministerial directives and the cost/benefit ratio for the patient. To learn how to use data banks of epidemiological interest and related periodic updates.

SYLLABUS

Hrs	Frontal teaching
2	Objectives and structure of the discipline.
4	Principles of pathogenesis, diagnostic and clinical approach to infectious diseases related to the workplace and categories at risk.
3	Overview of the infection process including modes of transmission and environmental risk factors in order to evaluate their effects on health and plan safeguard measures to apply on the workplace: diseases transmitted through contact and through droplets in closed work environments.
3	Diseases transmitted through food.
2	Tuberculosis: infection and disease.
4	Imported infectious diseases.
3	The healthcare environment and risk of infection.
3	Privacy in infectious diseases with chronic evolution.
4	Emerging infectious diseases: impact on the workplace and current regulations on prevention both at a local level and in particular settings.
2	Control of an outbreak of undefined etiology, case presentation, intervention methods, discussion.