



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata		
ACADEMIC YEAR	2016/2017		
BACHELOR'S DEGREE (BSC)	BIOMEDICAL LABORATORY TECHNIQUES		
INTEGRATED COURSE	CLINICAL MICROBIOLOGY - INTEGRATED COURSE		
CODE	09551		
MODULES	Yes		
NUMBER OF MODULES	3		
SCIENTIFIC SECTOR(S)	MED/07, MED/46		
HEAD PROFESSOR(S)	GIAMMANCO ANNA	Professore a contratto in quiescenza	Univ. di PALERMO
OTHER PROFESSOR(S)	FERRARO DONATELLA	Professore Associato	Univ. di PALERMO
	DISTEFANO	Professore a contratto	Univ. di PALERMO
	SALVATORE ANTONINO		
	GIAMMANCO ANNA	Professore a contratto in quiescenza	Univ. di PALERMO
CREDITS	9		
PROPAEDEUTICAL SUBJECTS	15913 - MICROBIOLOGY AND CLINICAL PARASITOLOGY		
MUTUALIZATION			
YEAR	2		
TERM (SEMESTER)	2° semester		
ATTENDANCE	Mandatory		
EVALUATION	Out of 30		
TEACHER OFFICE HOURS	<p>DISTEFANO SALVATORE ANTONINO Monday 13:30 14:30 Dipartimento di Scienze della Promozione della Salute, Materno-Infantile, Medicina Interna e Specialistica d'Eccellenza "G. D'Alessandro" , via del Vespro 133 (secondo piano)</p> <p>FERRARO DONATELLA Tuesday 13:00 14:00 Dipartimento Promozione della salute, Materno Infantile, di Medicina Interna e Specialistica di Eccellenza "G D'Alessandro", Via del Vespro 133, Piano 2°</p> <p>Thursday 13:00 14:00 Dipartimento Promozione della salute, Materno Infantile, di Medicina Interna e Specialistica di Eccellenza "G D'Alessandro", Via del Vespro 133, Piano 2°</p> <p>GIAMMANCO ANNA Tuesday 12:00 14:00 Dip Pro.Mi.Se</p>		

DOCENTE: Prof.ssa ANNA GIAMMANCO

PREREQUISITES	Students should have the basic knowledge of biology, biochemistry. You must have acquired a background of knowledge of physiology and general pathophysiology of human diseases
LEARNING OUTCOMES	Knowledge and ability to understand: to know the main clinical features of which microorganisms are responsible, microbial factors involved, the mechanisms that affect their expression and pathogenetic events that characterize them
ASSESSMENT METHODS	<p>Oral examination which consists of an interview aimed at verifying knowledge and full understanding of the topics addressed in the course, as well as the candidate personal capacity of explain and processing his/her knowledge. In order to pass the exam the candidate has to be evaluated with a mark between 18 and 30.</p> <p>30-30 laude: Excellent knowledge of teaching content; students demonstrate high analytical and synthetic capacity and it is able to apply the knowledge to solve problems of high complexity</p> <p>27-29: Excellent knowledge of teaching content and excellent properties of language; students demonstrate analytical and synthetic skills and able to apply their knowledge to solve moderately complex and, in some cases problems, even high</p> <p>24-26: Good knowledge of teaching content and good properties of language, the student is able to apply the knowledge to solve problems of medium complexity</p> <p>21-23: Fair knowledge of teaching content, in some cases limited to the main topic; acceptable ability to use the specific language of the discipline and independently apply the knowledge acquired</p> <p>18-20: Minimum knowledge of teaching content, often limited to the main topic; modest ability to use the specific language of the discipline and independently apply the knowledge acquired</p> <p>Insufficient: He does not have an acceptable knowledge of the main teaching content, very little or no ability to use the specific language of the discipline and independently apply the knowledge acquired</p>
TEACHING METHODS	frontal lessons

MODULE
MEDICINE AND LABORATORY TECHNICAL SCIENCES 2

Prof. SALVATORE ANTONINO DISTEFANO

SUGGESTED BIBLIOGRAPHY

- Elementi di Tecniche microbiologiche II ed. EMSI Nicola Simonetti, Giovanna Simonetti, Marcello Lembo 2001
- Laboratorio didattico di microbiologia Ann Vaughan edito nel 2008 da CEA
- Luigi Spandrio, Manuale di laboratorio, Vol. II, PICCIN editore, 1987
- Hoskins JM, Diagnosi virologica, Casa Editrice Ambrosiana, 1975
- Appunti delle lezioni, dispense e supporti informatici forniti dal docente

AMBIT	10341-Scienze e tecniche di laboratorio biomedico
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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

Acquire basic knowledge and develop certain aspects of the application of analysis techniques of microbiological and virological diagnosis, with particular attention to the methods of the most popular application in the areas of work pertaining to the course and to the most innovative and advanced.

SYLLABUS

Hrs	Frontal teaching
3	optical microscopes in use in a diagnostic laboratory and principles of electron microscopy
3	Introduction to diagnostic techniques in bacteriology: direct and indirect microscopic diagnosis on fresh specimen and after staining.
2	Culture methods for bacteria and fungi from pathological specimens: • Transport and sample handling • Conditions and sample seeding mode
2	bacterial count methods
3	Methods for identification of bacteria and fungi: • classical and automated methods (macro and micromethods) • Biochemical and antigenic identification
2	Techniques for the evaluation of drug sensitivity
2	Introduction to diagnostic techniques in virology: direct detection and indirect detection, sensitivity and specificity of the test.
2	Methods of virus culture: in vivo, embryonic chicken eggs, cell cultures: • Preparation of cell cultures from tissue and blood • Techniques and maintenance of long-term storage of cell cultures
2	Isolation and culture of virus - Preparation of the clinical sample - Infection techniques - Cytopathic effects - Identification techniques (haemadsorption, neutralization, immunofluorescence, immunoperoxidase, haemagglutination activity) Titration of viruses: the lysis plaques
2	Techniques for the detection of bacterial and viral antigens: • ELISA • Immunofluorescence (IF) • immunochromatography • passive agglutination
1	Preparation of bacterial and viral antigens for vaccines, anti sera, blotting
3	Serological techniques for the detection of anti-bacterial and anti-viral antibodies: IgM antibodies • IgG antibodies • avidity test • neutralizing antibodies
3	Molecular biology techniques applied in the microbiological and virological diagnosis: • Techniques for extracting nucleic acids. Identification of bacterial DNA in clinical samples (PCR, Nested-PCR, RT-PCR, quantitative PCR, RealTime PCR) Amplicons hybridization and detection methods (Electrophoresis, Hybridization, Reverse-hybridization, DEIA, sequencing)

**MODULE
MICROBIOLOGY AND CLINICAL MICROBIOLOGY**

Prof.ssa ANNA GIAMMANCO

SUGGESTED BIBLIOGRAPHY

Skerris - Microbiologia medica eds. 5 - EMSI

AMBIT	10341-Scienze e tecniche di laboratorio biomedico
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

To understand the role of microorganisms in human pathology and the mechanisms by which they determine pathogenicity .
To acquire the methodologies used for the attribution of the pathogenic role and diagnostic procedures .
To know the main clinical features, the microorganisms responsible, the diagnostic tests can identify them, the laboratory tests used to evaluate the activity of the drugs.

SYLLABUS

Hrs	Frontal teaching
5	Microbial pathogenesis
25	Evaluation for Urinary tract infection; Enteric infections and food poisoning; genital infections; central nervous system infections, intravascular infections bacteriemia and toxemia; nosocomial infection; skin and wound infections; bone and joint infections; ear, eye and sinus infections; dental and periodontal infections; respiratory tract infections.
30	Diagnostic procedure by direct and indirect approach and their applications
30	Direct and indirect technical diagnostics

**MODULE
SPECIAL VIROLOGY**

Prof.ssa DONATELLA FERRARO

SUGGESTED BIBLIOGRAPHY

Sherris- Microbiologia medica V ed.-2012 casa editrice EMSI

AMBIT	10341-Scienze e tecniche di laboratorio biomedico
INDIVIDUAL STUDY (Hrs)	45
COURSE ACTIVITY (Hrs)	30

EDUCATIONAL OBJECTIVES OF THE MODULE

Understanding the taxonomic and biological characteristics of viruses responsible for infections in human pathology .
Acquire the knowledge used for the attribution of the pathogenic role and diagnostic procedures.
Know the main clinical pictures associated with them

SYLLABUS

Hrs	Frontal teaching
3	Taxonomic and identification of major viruses cause human diseases.
3	Herpesviridae: Human Herpesvirus type 1 and Human Herpesvirus type 2, Cytomegalovirus, Varicella Zoster Virus, Epstein-Barr Virus
3	Papillomaviridae
3	Picornaviridae
4	Orthomyxoviridae, Paramyxoviridae
4	Reoviridae
6	HBV , HCV , HDV and other hepatitis viruses
4	Retroviridae