

UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Biomedicina, Neuroscienze e Diagnostica avanzata				
ACADEMIC YEAR	2023/2024				
MASTER'S DEGREE (MSC)	DIAGNOSTIC TECHNICAL HEALTH PROFESSIONS				
INTEGRATED COURSE	INTERDISCIPLINARY PROFESSIONALIZING PATH II - INTEGRATED COURSE				
CODE	22309				
MODULES	Yes				
NUMBER OF MODULES	3				
SCIENTIFIC SECTOR(S)	MED/07, I	BIO/12,	MED/4	3	
HEAD PROFESSOR(S)	BELLIA CHIARA			Professore Associato	Univ. di PALERMO
OTHER PROFESSOR(S)	CAPRA GIUSEPPINA		PINA	Professore Associato	Univ. di PALERMO
	MODICA CHIARA		A	Ricercatore a tempo determinato	Univ. di PALERMO
	BELLIA CHIARA			Professore Associato	Univ. di PALERMO
CREDITS	9				
PROPAEDEUTICAL SUBJECTS					
MUTUALIZATION					
YEAR	2				
TERM (SEMESTER)	1° semester				
ATTENDANCE	Mandatory				
EVALUATION	Out of 30				
TEACHER OFFICE HOURS	BELLIA CHIARA				
	Monday	12:00	14:00	Sezione di Biochimica Clinica, e Medicina di Laboratorio, Dipa Neuroscienze e Diagnostica Av Vespro 129	Medicina Molecolare Clinica artimento di Biomedicina, vanzata (BiND), Via del
	Tuesday	12:00	14:00	Sezione di Biochimica Clinica, e Medicina di Laboratorio, Dipa Neuroscienze e Diagnostica Av Vespro 129	Medicina Molecolare Clinica artimento di Biomedicina, vanzata (BiND), Via del
	CAPRA GIUSEPPINA				
	Tuesday 12:00 13:00 PROSAMI Via del vespro 133				
	MODICA CHIARA				
	Tuesday	11:00	15:00	Via del vespro 131	

DOCENTE: Prof.ssa CHIARA BELLI	٩
DDEDEOLIISITES	

PREREQUISITES	The student must possess elementary knowledge regarding organizational models of clinical laboratory, clinical biochemistry, and clinical microbiology acquired during the first year of the course.
LEARNING OUTCOMES	The objective of the integrated course is to provide students with knowledge related to the technical aspects and the organizational and structural models of the laboratory. The course will provide the necessary knowledge for the management of pre-analytical, analytical, and post-analytical laboratory processes, with particular emphasis on processes related to data management and report requests. Human resource management aspects in the laboratory setting will also be analyzed.
ASSESSMENT METHODS	The assessment of learning will be carried out through midterm exams and oral and written exams. The assessment exams are aimed at assessing the skills and disciplinary knowledge provided by the course; the evaluation is expressed on a scale of thirty. The midterm exam is evaluated on a scale of thirty, and the final grade is the result of the arithmetic average between the grade obtained in the midterm exam and the final exam. The exam will tend to test the knowledge of the student achieved by assessing a) the knowledge captured; b) the processing capacity, c) the possession of adequate exhibition capacity. The pass mark will be reached when the student will demonstrate the knowledge of the issues at least in general terms, and has minimal application knowledge in order to solve concrete cases; the student must also have oral presentation skills to allow the transmission of his knowledge to the examiner. Below this threshold, the examination will be insufficient. Midterm exams and Oral assessment. This assessment is used to evaluate the student's knowledge and understanding of the programme content, independent judgement, ability to apply acquired knowledge and specific technical terminology. The student will have to answer a minimum of four questions posed orally which will focus on the subjects covered in the programme, making reference to suggested texts. The assessment grades are given as numerical scores awarded out of a possible 30 points, and as follows: - 30 - 30 cum laude - ECTS grades: Excellent (A – A+) Result: Excellent knowledge of the taught subject matter. The student demonstrates good knowledge of the taught subject matter and good use of language. The student is able to apply knowledge to resolve some complex problems $27 - 29 - ECTS$ grades: Very good knowledge of the taught subject matter and good use of language. The student subject matter, in some cases limited to the main topics. Acceptable use of technical language and capacity to apply acquired knowledge of the taught subject matter
TEACHING METHODS	Lectures

MODULE CLINICAL BIOCHEMISTRY

Prof.ssa CHIARA BELLIA

SUGGESTED BIBLIOGRAPHY		
M. Ciaccio. Trattato di Biochimica Clinica e Medicina di Laboratorio. EdiSES, Edizione 2021. ISBN 9788836230440		
AMBIT	20412-Scienze biomediche	
INDIVIDUAL STUDY (Hrs)	51	
COURSE ACTIVITY (Hrs)	24	
EDUCATIONAL OBJECTIVES OF THE MODULE		

The educational objectives of the module of Clinical Biochemistry consist of acquiring the fundamental knowledge (theoretical and practical) that allows students to understand the workflow within a clinical laboratory and the general organization of analytical activities carried out in it, as well as critically evaluating the relevant data in Clinical Biochemistry in relation to pathological conditions in humans.

SYLLABUS		
Hrs	Frontal teaching	
2	The laboratory diagnostic process and elements of organization in the Clinical Biochemistry laboratory.	
4	Overview of biomarkers. Use of clinical tests in the context of screening, diagnosis, prognosis, staging, risk stratification, treatment response, and disease progression.	
4	Definition and clinical application of the main measures of diagnostic accuracy: sensitivity, specificity, predictive value, and ROC curves.	
4	Evaluation of the diagnostic accuracy of laboratory tests. Elements of clinical research methodology applied to diagnostic accuracy studies. Analysis of the STARD statement (Standards for Reporting of Diagnostic Accuracy Studies); critical review of scientific papers on diagnostic accuracy.	
4	The quality of laboratory results: sources of analytical variability, analytical error, and assessment of their clinical impact.	
2	The analytical cycle: pre-analytical phase, analytical phase with elements of metrology, post- analytical phase.	
4	Interpretation of laboratory data: intra-individual and inter-individual biological variability, reference values, critical difference, and index of individuality.	

MODULE ORGANIZATIONAL AND MANAGERIAL MODELS OF TECHNICAL-DIAGNOSTC SERVICES

Prof.ssa CHIARA MODICA

SUGGESTED BIBLIOGRAPHY		
Medicina di laboratorio. Logica e patologia clinica. Antonozzi, Gulletta. Manuale di programmazione e organizzazione sanitaria. Gianfranco Damiani, Maria Lucia Specchia, Walter Ricciardi		
AMBIT	20416-* Scienze e tecniche di laboratorio biomedico	
INDIVIDUAL STUDY (Hrs)	51	
COURSE ACTIVITY (Hrs)	24	
EDUCATIONAL OBJECTIVES OF THE MODULE		

The course aim to provide students with knowledge of the technical aspects and the organizational and structural models of the laboratory. The teaching provides the necessary knowledge for the management of pre-analytical, analytical and post-analytical laboratory processes, giving particular interest to the processes related to data management and the request for the report. The aspects of human resource management in the laboratory field will also be analysed.

STELABUS		
Hrs	Frontal teaching	
3	Laboratory medicine	
3	Contribution of laboratory tests for the improvement of health and care system.	
4	Management of pre-analytical, analytical and post-analytical processes.	
4	Data management and report request.	
4	Human resources management.	
3	Organizational innovation in Laboratory Medicine.	
3	Critical assessment of departmental management level and evaluation of the efficiency of operational processes.	

SYLLABUS

MODULE **CLINICAL MICROBIOLOGY**

Prof.ssa GIUSEPPINA CAPRA

SUGGESTED BIBLIOGRAPHY

Roberto Cevenini Microbiologia clinica Editore: Piccin-Nuova L Eugenio Agenore Debbia Microbiologia Clinica La Placa Principi di Microbiologia Medica EdiSes	ibraria
AMBIT	20416-* Scienze e tecniche di laboratorio biomedico
INDIVIDUAL STUDY (Hrs)	51
COURSE ACTIVITY (Hrs)	24
EDUCATIONAL OBJECTIVES OF THE MODULE	

- Introducing the organization of the Microbiology and Virology Unit.

- Acquire methodological and technical-operational skills for the analysis of healthcare processes within the Microbiology and Virology Unit - Develop assessment and intervention skills related to the organization, management and monitoring of the diagnostic

pathways of the Microbiology and Virology Unit. - Acquire managerial skills in the field of human, structural and technological resources, planning interventions aimed at

improving efficiency within the Microbiology and Virology Unit

- Know the characteristics of different types of scientific paper

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Hrs	Frontal teaching	
2	The diagnostic pathways in Clinical Microbiology: from sampling to the report	
2	The laboratory diagnostic process: the quality of the result and the function of the controls. Quality controls	
4	Diagnostic pathway: bloodstream infections	
4	Diagnostic pathway: central nervous system infections	
4	Diagnostic pathway: urinary tract infections	
4	Diagnostic pathway: sexually transmitted infections	
4	Diagnostic pathway: pulmonary infections	

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