

CORSO DI STUDIO Medicina e Chirurgia

ANNO ACCADEMICO 2026-2027

DENOMINAZIONE DELL'INSEGNAMENTO C.I. Microbiologia e Immunologia (9 CFU)

Principali informazioni sull'insegnamento	
Anno di corso	II anno
Periodo di erogazione	I semestre
Crediti formativi universitari (CFU/ETCS):	9 di cui 6 MEDS-03/A e 3 MEDS-02/A
SSD	MEDS-03/A Microbiologia e Microbiologia Clinica; MEDS-02/A Patologia Generale
Lingua di erogazione	Italiano
Modalità di frequenza	obbligatoria

Docente	
Nome e cognome	Angela Quirino – Presidente del Corso Integrato
Indirizzo mail	quirino@unicz.it
Telefono	09613647755
Sede	Livello O Corpo C
Sede virtuale	quirino@unicz.it
Ricevimento	Martedì e giovedì dalle ore 14:00 si riceve su appuntamento
Nome e cognome	Giovanni Matera
Indirizzo mail	mmatera@unicz.it
Telefono	09613647749
Sede	Livello O Corpo C
Sede virtuale	mmatera@unicz.it
Ricevimento	Martedì e giovedì dalle ore 14:00 si riceve su appuntamento
Nome e cognome	Nadia Marascio
Indirizzo mail	nmarascio@unicz.it
Telefono	09613647742
Sede	Livello O Corpo C
Sede virtuale	nmarascio@unicz.it
Ricevimento	Martedì e giovedì dalle ore 14:00 si riceve su appuntamento
Nome e cognome	Affidamento bando docenza 0.5 CFU
Indirizzo mail	
Telefono	
Sede	
Nome e cognome	Donatella Malanga
Indirizzo mail	malanga@unicz.it
Telefono	09613644233
Sede	Livello 5 Edificio G
Sede virtuale	malanga@unicz.it
Ricevimento	Mercoledì dalle ore 15:00 Si consiglia fissare appuntamento per email.

Organizzazione della didattica			
Ore			
Totali	Didattica frontale	Pratica (laboratorio, campo, esercitazione, altro)	Studio individuale
225	117		108
CFU/ETCS			
9			

Obiettivi formativi	The student must acquire a sufficiently thorough knowledge of the various topics to enable them to utilize appropriate notions of General Microbiology and Immunology in different therapeutic contexts. Particular attention must be dedicated to the following topics: • Host-parasite relationships • Overview of infectious diseases • Pathogens: special section • Methods for studying microorganisms • Etiology of diseases • Response to damage: Inflammation • Principles of innate and adaptive immune response • General pathophysiology of the Immune System
Prerequisiti	To successfully follow the Microbiology course, students must possess knowledge of cell biology, biochemistry, and molecular biology. Furthermore, knowledge of anatomy and physiology will be necessary for a proper understanding of the pathogenetic mechanisms of bacteria, viruses, fungi, and protozoa, as well as the immune response.

Metodi didattici	The primary teaching method consists of lectures; the practical component will serve to evaluate the application of knowledge through seminars and clinical case analysis.
Risultati di apprendimento previsti Da indicare per ciascun Descrittore di Dublino (DD=	At the end of the course, the student must know the cellular and molecular bases of microbial pathogenicity and host-microorganism interactions, general clinical-diagnostic aspects of microbiological investigation, and targets of antimicrobial/antiviral drugs; knowledge of main bacteria, fungi, protozoa, and viruses as etiologic agents of infectious diseases. Additionally, students must understand Human Immune Response mechanisms through Innate and Adaptive Immunity principles and immune response modulation regarding immune system pathologies, immunodeficiencies, and autoimmune diseases.
DD1 Conoscenza e capacità di comprensione	The student must understand the importance of Microbiology in studying morphological, metabolic, and genetic aspects of microorganisms and their role in stimulating the Immune Response in its physiological and pathological aspects.
DD2 Conoscenza e capacità di comprensione applicate	The student must understand molecular mechanisms involved in infectious processes, transmission and spread pathways of major pathogens, diagnostic techniques, and therapeutic options. They must also understand how dysfunction of innate and adaptive immunity can lead to human diseases.
DD3-5 Competenze trasversali	At the end of the course, the student must be able to critically and independently analyze essential biological characteristics of microorganisms responsible for human infections, host-microorganism interactions, and the immune response to pathogens. The student must be able to present topics clearly, using appropriate scientific terminology to specialist and non-specialist audiences.

Contenuti di insegnamento (Programma)	Bacteriology The bacterial cell: structure, metabolism, reproduction, spore production. Bacterial genetics. Pathogenic action of bacteria: mechanisms of pathogenicity, exotoxins and endotoxins. Cultivation and identification of bacteria. General principles of bacteriological diagnosis. In vitro susceptibility testing. Bacteria of medical interest: Staphylococci, Streptococci and Enterococci, Pneumococci, Bacillus anthracis and Bacillus cereus, Corynebacteria, Listeria monocytogenes, Mycobacteria, Neisseria, Enterobacteriaceae, Vibrio, Helicobacter, Yersinia, Brucella, Haemophilus, Bordetella, Pseudomonas, Legionella, Clostridium, Spirochetes, Bartonella, Rickettsia, Chlamydia, Mycoplasma. Virology Generalità sui virus. Composizione chimica, struttura, morfologia. Classificazione General characteristics of viruses. Chemical composition, structure, morphology. Virus classification. Multiplication and replication strategies. Viral genetics. Cultivation and titration systems. Pathogenic action of viruses. Virus-cell relationships. Pathogenesis of viral infections. Virus-host relationships. General principles of virological diagnosis. Viruses of medical interest: Poxviridae, Adenoviridae, Herpesviridae, Papillomavirus, Parvoviridae, Orthomyxoviridae, Paramyxoviridae, Rhabdoviridae, Arenaviridae, Filoviridae, Bunyaviridae, Flaviviridae, Togaviridae, Coronaviridae, Reoviridae, Picornaviridae, Retroviruses, Primary Hepatitis Viruses. Mycology Caratteristiche generali dei miceti. Patogenesi delle micosi e meccanismi dell'azione General characteristics of fungi. Pathogenesis of mycoses and pathogenic mechanisms. Study and diagnostic methods. Fungi of medical interest: Yeast-like fungi (Candida albicans, Cryptococcus neoformans), Filamentous fungi (Dermatophytes, Aspergillus). Protozoology Caratteristiche generali dei protozoi. Meccanismi dell'azione patogena. Diagnosi delle infezioni da protozoi. I protozoi di interesse medico: Giardia intestinalis, Trichomonas vaginalis, Tripanosomi, Leishmanie, Amebe, Plasmodi, Toxoplasma gondii, Pneumocystis carinii. The Immune Response Evolution of the Immune System, Adaptive and Innate Immunity general principles. Innate Immunity: First line of defense. Complement System. Recognition mechanisms. Tissue response and inflammatory reaction: vascular and cellular

	events. Inflammatory Cytokines and Chemokines. Natural immunity cells. Adaptive Immunity: Cellular and molecular aspects. Antigen recognition receptors (T and B lymphocytes). Antibody structure. T cell receptor (TCR) structure. Genetics of BCR, Immunoglobulins, and TCR; receptor diversity generation. Major Histocompatibility Complex (Class I & II). Antigen processing/presentation. T and B lymphocyte development, maturation, and survival. Immune Mechanisms & Pathology Cell-mediated adaptive response mechanisms. B cell-mediated adaptive response mechanisms. Integration of innate and adaptive immune responses. Immunological Memory. Immunity and infectious diseases, vaccination. Mucosal-associated immune system. Immunopathology: Defense mechanism deficits (immunodeficiency diseases), Hypersensitivity reactions, Allergies, Autoimmunity, Autoimmune diseases, Immunity and transplantation.
Testi di riferimento	La Placa M. - Principi di Microbiologia Medica (Ed. Esculapio) - Murray P. R. et al. - Microbiologia Medica (Ed EMSI) - Antonelli Guido et al. - Principi di Microbiologia Medica (Ed Ambrosiana). - Immunobiologia di Janeway – Nona Edizione Italiana a cura di Massimo Locati e Fabrizio. PICCIN - Immunologia cellulare e molecolare. Abul Abbas Andrew H. Lichtman Shiv Pillai Editors: Silvano Sozzani, 9th Edition, Elsevier
Note ai testi di riferimento	Video lessons, popular science texts, scientific articles
Materiali didattici	The teaching material will be available on the E-learning website

Valutazione	
Modalità di verifica dell'apprendimento	- The exam will be a written and oral exam; - There will be an ongoing test with multiple-choice questions midway through the course for the SSD MED/07 course and three ongoing written tests for the SSD MED/04 Immunology course. - The schedule of the learning tests is scheduled at the beginning of the course and also communicated on the e-learning platform. - The evaluation of the ongoing tests will allow teachers to assess the students' level of learning.
Criteri di valutazione	For each expected learning outcome listed above, describe what the student is expected to know or be able to do, and to what extent, in order to demonstrate that a learning outcome has been achieved (for example: ability to organize knowledge discursively; ability to critically reason about the study completed; quality of presentation, proficiency in using specialized vocabulary, effectiveness, linearity, etc.). - Knowledge and understanding: the main biological characteristics of microorganisms responsible for human infections; - Applied knowledge and understanding: the pathogenic mechanisms of microorganisms responsible for human infections; - Making judgments: critically and independently analyze microorganism-host interactions. - Communication skills: ability to present topics clearly and with appropriate scientific language. - Learning skills: ability to independently research topics in scientific or specialist journals.
Criteri di misurazione dell'apprendimento e di attribuzione del voto finale	The final grade is awarded out of 30. A pass is considered when the grade is 18 or higher. The written exam will be based on the scores given to individual or group

	questions. Students will advance to the oral exam if they achieve at least 18 in the written exam. Honors will be awarded to students who demonstrate a high level of thoroughness, independent judgment, and adequate presentation skills.
--	---

Risultati	Conoscenza e comprensione argomento	Capacità di analisi e sintesi	Utilizzo di referenze
Non idoneo	Importanti carenze. Significative inaccuratezze	Irrilevanti. Frequenti generalizzazioni. Incapacità di sintesi	Completamente inappropriato
18-20	A livello soglia. Imperfezioni evidenti	Capacità appena sufficienti	Appena appropriato
21-23	Conoscenza routinaria	È in grado di analisi e sintesi corrette. Argomenta in modo logico e coerente.	Utilizza le referenze standard
24-26	Conoscenza buona	Ha capacità di a. e s. buone gli argomenti sono espressi coerentemente, ha capacità minime di utilizzo delle nozioni apprese.	Utilizza le referenze standard
27-29	Conoscenza più che buona	Ha notevoli capacità di a. e s., ha capacità medie di utilizzo delle nozioni apprese.	Ha approfondito gli argomenti
30 - 30L	Conoscenza ottima	Ha notevoli capacità di a. e s., ha capacità buone/ottime di utilizzo delle nozioni apprese.	Importanti approfondimenti

	-
Altro	
	.

