Dipartimento
Interdisciplinare di Medicina
Direttore Prof. Roberto Catanesi

COURSE OF STUDY: MEDICINE AND SURGERY (LM41)

ACCADEMIC YEAR: 2024-2025

INTEGRATED COURSE: Microbiology, Clinical Microbiology and Parasitology (Tot CFU/ECTS 5+1)

ACADEMIC SUBJECT: Microbiology and Clinical Microbiology (Tot CFU/ECTS 5)

COURSE BRANCHES: LZ

General information	
Course year	2
Academic calendar (starting and ending date)	1st semester (September 2024 – February 2025)
Credits (CFU/ECTS):	5
SSD	Microbiology and Clinical Microbiology (MEDS-03; formerly Med/07)
Language	Italian
Mode of attendance	Mandatory, in person.

Professor/ Lecturer	
Name and Surname	Luigi Santacroce
E-mail	luigi.santacroce@uniba.it
Telephone	+390805478486
Department and address	Interdisciplinary Department of Medicine – Sect. of Microbiology and Virology, 3rd floor of Istituti Biologici, p.zza G. Cesare 11 – 70124 Bari
Virtual room	
Office Hours (and modalities, e.g., by appointment, online, etc.)	Monday - Friday from 11:00 a.m. to 4:00 p.m., at the Microbiology and Virology section, by prior e-mail appointment.

Work schedule			
Hours			
Total	Lectures	Hands-on (laboratory, workshops, working groups, seminars, field trips)	Out-of-class study hours / Self-study hours
50	50	0	75
CFU/ETCS			
5	5	0	

Learning Objectives	To provide knowledge on the main microbes (i.e., taxonomy, morphology, pathogenic activity) and infectious diseases (etiology and pathogenesis, with basic clinical hints), with special focus on the diagnostic procedure. The student goal is to acquire specific skills on infective agents useful for personal statement and future professional practice.
Course prerequisites	Propedeutic exams as for study plan.

Teaching strategies	The course is based on interactive in person lectures, with slides presentations, offered in a classroom equipped with multimedia tools. Students are solicited to intervene at any time during the lecture.

Expected learning outcomes in terms of	• Knowledge of the main concepts of Microbiology and Clinical Microbiology provided by lectures and reported in the syllabus. • Development of proper communicative and critical skills. • Development of a proper scientific language.

Knowledge and understanding on:	Knowledge of the main microbes accounting for infectious diseases in humans, their general and specific features, and methods available for their laboratory diagnosis.
Applying Knowledge and understanding on:	Knowledge and ability in making a diagnosis of infectious diseases (from clinical suspicion to the choice of appropriate diagnostic tests); ability to perform microbial identification by specific methods leading to an etiological diagnosis of disease.
Soft skills:	During the written test the student is expected to answer questions by demonstrating critical and judgmental skills: - *Autonomy of judgment* The student should demonstrate basic knowledge of microbes and laboratory diagnostic methods. - *Communication skills* The student, after acquiring the required skills, should be able to be able to communicate what learned using the correct scientific terminology. - *Ability to learn independently* Based on the knowledge acquired, the student should be able to improve continuous learning.
Syllabus	

Texts and readings	**General aspects of microbes and host-microbe interactions, and Clinical microbiology** The microbial world: bacteria, viruses and fungi Elements of microbiological taxonomy General features of bacteria General features of viruses Prions Fungi: main features and cultivation The human microbiota. Probiotics Transmission, diffusion and replication of microorganisms. Persistent infections. Relationships between microorganisms and host. Virus-host interactions. Natural defenses of the organism. Immune response and survival strategy of infectious agents. Clinical manifestations and diagnosis of infections of individual body areas. Prevention of infections and infectious diseases. Vaccines and sera. Chemical and physical agents for the control of microorganisms. Anti-infective chemotherapy. The antimicrobial resistance and antimicrobial susceptibility tests. Methods and tools for research and diagnostics in microbiology and clinical microbiology. **Systematic bacteriology:** Staphylococci, Streptococci and enterococci, *Bacillus anthracis* and *Bacillus cereus, Corynebacterium diphtheriae, Listeria monocytogens, Gardnerella vaginalis, Actinomycetes, Neisseriaceae, Mycobacteria* and MOTT *Enterobacteria, Helicobacter pylori,, Brucellae, Haemophilus, Bordetellae, Legionellae, Clostridia, Spirochetes, Bartonellae, Rickettsiae, Ehrlichie, Chlamydia* and *Mycoplasmas*. **Systematic virology:** The course focuses on the main members of the following: DNA viruses: Papillomaviridae, Herpesviridae, Adenoviridae, Parvoviridae, Poxviridae, Hepadnaviridae. RNA viruses: Picornaviridae, Coronaviridae, Orthomyxoviridae, Paramyxoviridae, Pneumoviridae, Rhabdoviridae, Filoviridae, Hepatitis RNA-viruses, Reoviridae and enteric viruses, Togaviridae, Flaviviridae, Retroviridae. **Systematic mycology:** Dermatophytes, *Malassezia furfur, Candida* spp, *Cryptococcus* spp, *Nocardia* spp, *Aspergillus* spp. • Patrick Murray, Ken S. Rosenthal, and Michael A. Pfaller. Medical Microbiology, 9th Edition, 2020. Elsevier • Murray P. Basic Medical Microbiology, 2nd Edition, 2023. Elsevier • Struthers J.K., Clinical Microbiology, 2nd Edition, 2017 CRC Press Any other textbook of medical microbiology may be considered, if recent
Notes, additional materials	Students' personal notes
Repository	The selection of images and tables showed during the lectures will be made available online

Assessment	
Assessment methods	The learning will be assessed through a written exam based on 5 (five) topics from the syllabus and explained by the lectures. The final grade will be expressed as a unique mark based on the weighted average of the grades of the IC teachings.
Assessment criteria	• *Knowledge and understanding skills:* The student should demonstrate personal knowledge and understanding of the topics in the syllabus and exposed during the lectures. • *Applied knowledge and understanding skills:* Knowledge of the general and specific features of the main microbes and ability to apply it for microbial identification, and the main diagnostic tests for laboratory diagnosis of infectious diseases. • *Autonomy of judgment:* Be able to independently express a personal opinion on the topics under consideration. • *Communication skills:* Learn and use a correct technical terminology, and be able to rework subject content with critical aspect • *Learning skills:* Be able to answer correctly and accurately to specific questions.
Final exam and grading criteria	Assessment of the learning will be achieved through a written exam to evaluate the knowledge of the subject and the student's communication skills. Successful completion of the exam will involve a final grade expressed in thirtieths. Honors will be awarded if the student demonstrates excellent subject knowledge, excellent expression skills and quality of language.
Further information	

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Course of study: MEDICINE AND SURGERY (LM41)

ACCADEMIC YEAR: 2024-2025

INTEGRATED COURSE: Microbiology, Clinical Microbiology and Parasitology (Tot CFU 5+1)

ACADEMIC SUBJECT: PARASSITOLOGY (Tot CFU 1+1)

COURSE BRANCHES: LZ

Main information of teaching	
Course year	2
Lecture period	I semester (September 2024 – February 2025)
University credits (CFU) / European Credit Transfer and Accumulation System (ECTS):	1+1

SSD	Parasitology and Parasitic Diseases of animals and humans (VET06; now MVET-03/B)
Language	English
Attendance mode	Mandatory, in person

Teacher	
Name and Surname	Roberta Iatta
E-mail	roberta.iatta@uniba.it
Telephone	
Department and address	Dipartimento Interdisciplinare di Medicina
Virtual room	Teams
Office Hours (and modalities, e.g., by appointment, online, etc.)	Mondays, Wednesdays, and Fridays from 2:00 p.m. to 5:00 p.m., at the office or through Teams, by prior e-mail appointment.

Teaching organization			
hours			
Total	Teaching activity	Practical activity (laboratory, field, other)	Self-study
130	10	120	30
CFU/ETCS			
2	1	1	

Educational objectives	To provide knowledge on the main parasites specifically on taxonomy, morphology and life cycle and hints on diagnostic techniques. The student goal is to acquire specific skills on parasites infecting humans being useful in her/his education and later on in professional practice.
Prerequisites	Elements of biology, general and organic chemistry

Teaching methods	The course includes teaching lectures, delivered in a classroom equipped with multimedia tools through the classic projection of power point presentations. During the practical activities, microscopic and macroscopic observation of parasites along with the main diagnostic tools used in routinely laboratories will be shown and described. The staining of microscopic preparations will also be set up. Students will be allowed to intervene and ask for clarification at any time during the lecture and practical activity.

Expected learning outcomes	• Knowledge of the main concepts of Parasitology provided by lectures and hints on diagnostic techniques as reported in the syllabus • Communicative and critical skills • Proper scientific language
DD1 Knowledge and comprehension skills	Knowledge and skills concerning parasites to be applied during the course closely related to infectious diseases.
***DD2* Applied knowledge and comprehension skills**	Knowledge and ability in understanding the importance of the parasites and their pathogenic role in humans.
***DD3*- Trasversal skills**	During the written examination, the student is expected to answer the questions by demonstrating critical and judgmental skills - *Autonomy of judgment* The student should demonstrate basic knowledge of parasites and diagnostic methods - *Communication skills* The student, having acquired the required skills, should be able to demonstrate her/his ability to learn and communicate what she/he has learned using the correct scientific terminology. - *Ability to learn independently* Based on the knowledge acquired, the student should be able to continue further study and implement it when necessary during his/her professional career.
Teaching contents (Syllabus)	**General aspects on parasites and arthropod vectors, their interactions with hosts and hints on diagnostic techniques** Parasites and parasitism. Taxonomic elements. Morphological and physiological characteristics of protozoa, helminths and arthropods. Host-parasite interaction and direct and indirect biological life cycles. Hints on diagnostic techniques including staining used for microscopic observation of parasites and principal tools/methods used for the diagnosis of parasitic diseases. **Protozoa** Apicomplexa: *Toxoplasma gondii*, *Cryptosporidium* spp., e *Plasmodium* spp.

	Euglenozoa: *Trypanosoma* spp., *Leishmania* spp. Metamonada: *Giardia* spp. Amoebozoa: *Entamoeba* spp., *Acanthamoeba* spp. **Platyhelminthes** Class cestoda**:** *Taenia* spp., *Echinococcus* spp., *Hymenolepis* spp., *Dipylidium caninum, Diphyllobothrium* spp.; Larval cestodes in tissues (i.e., hydatid, *Cysticercus* spp. *coenuro*) Class Trematoda: *Opistorchis*/*Clonorchis* spp., *Fasciola* spp., *Schistosoma* spp. **Nematoda** Order Strongylida: *Ancylostoma* spp.; Ascaridida: *Ascaris lumbricoides*, *Toxocara* spp. e *Anisakis* spp.; Oxyurida: *Enterobius vermicularis*; Rhabditida: *Strongyloides* spp.; Spirurida: *Dirofilaria* spp., *Onchocerca* spp., *Wuchereria* spp., *Brugia* spp. e *Loa loa*; Trichocephalida: *Trichuris* spp., *Trichinella* spp. **Arthropoda** Class Insecta; Order: Hemiptera, Diptera, Phthiraptera and Siphonaptera; Family: Culicidae, Pychodidae, Muscidae, Simuliidae, Glossinidae and Calliphoridae Class Arachnida; Order: Parasiteformes and Acariformes
Recommended textbook	- Cancrini G., Parassitologia medica illustrata, Casa Editrice Edra, Milano, 2017 - Fabrizio Bruschi ed Edoardo Pozio - De Carneri - Parassitologia generale e umana, Casa Editrice Ambrosiana. Zanichelli 2023
Notes	none
Teaching materials	slides

Assessment	
Learning assessment methods	The learning will be assessed through an written examination on the topics given in the syllabus and provided by the lectures. The final grade will be based on the weighted average of the grades of the IC teachings.
Evaluation criteria	• *Knowledge and understanding skills:* The student should demonstrate good knowledge and understanding of the topics covered in the syllabus and discussed during the teaching activity

	Applied knowledge and understanding skills: Knowledge of the parasites and ability for identifying them, and the main diagnostic tests used to diagnose parasitoses • *Autonomy of judgment:* Be able to independently express his/her opinion on the topics studied • *Communication skills:* The use of correct terminology and the ability to rework subject content with critical aspect • *Learning skills:* Correct and accurate responses to questions
Criteria for learning measure and assignment of final grade	Assessment of the learning achieved will be through an written examination designed to ascertain the degree of knowledge of the subject and the student's communication skills. Successful completion of the examination will involve a final grade expressed in thirtieths. Honors will be awarded if the student demonstrates excellent subject knowledge, excellent expression skills and quality of language.
Other	