

МЕДИЦИНСКИ УНИВЕРСИТЕТ - ВАРНА
„Проф. д-р Параскев Стоянов“

Ул. „Марин Дринов“ 55, Варна 9002, България
Тел.: 052/ 65 00 57, Факс: 052/ 65 00 19
e-mail: uni@mu-varna.bg, www.mu-varna.bg



MEDICAL UNIVERSITY - VARNA
"Prof. Dr. Paraskev Stoyanov"

55, Marin Drinov Str., 9002 Varna, Bulgaria
Tel.: +359 52/ 65 00 57, Fax: + 359 52/ 65 00 19
e-mail: uni@mu-varna.bg, www.mu-varna.bg

FACULTY OF MEDICINE

Approved:

Dean:

(Prof. Yoto Yotov, MD, PhD)



SYLLABUS IN MICROBIOLOGY

Specialty	MEDICINE
Educational - qualification degree	master
Organizational form of education	full-time
Auditorial activity (Lectures/Seminars)	150 (90/60)
Extra-auditorial activity	120
ECTS- credits	9
Discipline type	compulsory
Semester/s of education	Fifth and sixth
Semester of examination	sixth
Developer(s) of the Syllabus:	Assoc.Prof. Milena Bozhkova, MD,PhD Prof. Temenuga Stoeva,MD, MD,PhD,DSc Assoc.Prof. Zhivka Stojkova, MD,PhD Assoc.Prof. Denica Caneva, MD,PhD Assoc.Prof. Tatina Todorova, PhD Assoc.Prof. Neli Ermenlieva, PhD Assoc.Prof. Gabriela Tzankova, PhD

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ANNOTATION

Aims of the course	Microbiology Program covers the major topics of microbiology and immunology: general microbiology, infection and immunity, bacteriology, mycology, virology and clinical microbiology (microbiological aspects of infections of different systems). The goal of the program is to provide accurate and up-to-date presentation of those aspects of medical microbiology that are of particular significance to the field of clinical infections and chemotherapy as well as to develop basic practical (laboratory) skills. The important signs, symptoms and etiology of diseases are presented along with mechanisms of preventing infection and means of identifying and diagnosing the causative agent.
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Outcomes for students at the end of the course:	
Competences	
Competence group	Patient Care that is compassionate, appropriate, and effective for treating health problems and promoting health.
Knowledge	In the course of study, students are introduced to the basic principles of diagnosis, treatment and prevention of diseases related to microorganisms - bacteria, viruses and fungi.
Skills	The basic skills for selection, collection, transportation and processing of clinical materials from patients for microbiological examination are mastered.
Competence group	Medical Knowledge about established and evolving biomedical, clinical, and cognate (eg, epidemio-logical and social-behavioral) sciences and the application of this knowledge to patient care.
Knowledge	In the course of study, students are introduced to the basic principles of diagnosis, monitoring and control of infectious diseases.
Skills	Skills to perform basic laboratory techniques used in diagnostic microbiology and virology. Skills to apply the results of basic laboratory tests in order to optimize diagnostic and therapeutic regimens as an expression of patient care.
Competence group	Interpersonal and Communication Skills that result in effective information exchange and teaming with patients, their families, and other health professionals.
Knowledge	One of the main components of the educational process in the discipline "Microbiology" is the acquisition of basic knowledge of infectious pathology, which requires good communication with other medical specialists, as well as with the patients themselves and their families.

Skills	Skills in determining the correctness of basic diagnostic laboratory tests in microbiology and virology and methods for determining adequate antimicrobial chemotherapy.
Competence group	Professionalism , as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
Knowledge	Knowledge in the field of medical microbiology, including those related to the spread and control of infectious diseases at an individual and population level, requires strict adherence to basic ethical principles and presupposes a high level of professionalism.
Skills	Mastering basic methods for identifying infectious agents, analyzing and monitoring therapeutic approaches with a focus on the individual characteristics of the patient.
Competence group	Systems-Based Practice , as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
Knowledge	Detailed knowledge of the properties of infectious agents and methods for diagnosing infectious processes is an integral part of public health care, which requires basic knowledge and competencies in microbiology and virology.
Skills	Mastering the main methods for identifying infectious agents – bacteria, viruses and fungi and systematizing this data in order to control their spread.

Key competencies for lifelong learning¹, that the discipline develops:

Literacy competence Literacy is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way.	X
Multilingual competence This competence defines the ability to use different languages appropriately and effectively for communication. It broadly shares the main skill dimensions of literacy: it is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs.	
Mathematical competence and competence in science, technology, engineering A. Mathematical competence is the ability to develop and apply mathematical thinking and insight in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and	X

¹ As defined in 2018 r. by the European Union Council ([https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604(01)&from=EN))

activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought and presentation (formulas, models, constructs, graphs, charts). B. Competence in science refers to the ability and willingness to explain the natural world by making use of the body of knowledge and methodology employed, including observation and experimentation, in order to identify questions and to draw evidence-based conclusions. Competences in technology and engineering are applications of that knowledge and methodology in response to perceived human wants or needs. Competence in science, technology and engineering involves an understanding of the changes caused by human activity and responsibility as an individual citizen.	
Digital competence Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.	X
Personal, social and learning to learn competence Personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being, to maintain physical and mental health, and to be able to lead a health-conscious, future-oriented life, empathize and manage conflict in an inclusive and supportive context.	
Citizenship competence the ability to act as responsible citizens and to fully participate in civic and social life, based on an understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability.	
Entrepreneurship competence Entrepreneurship competence refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social or financial value.	
Cultural awareness and expression competence Competence in cultural awareness and expression involves having an understanding of and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts and other cultural forms. It involves being engaged in understanding, developing and expressing one's own ideas and sense of place or role in society in a variety of ways and contexts.	

Methods of education
<ul style="list-style-type: none"> ▪ lectures ▪ practicals and laboratory seminars, practical and creative problem solving, case studies, consultations, work with scientific literature, regulatory documents, databases, analyses, presentations ,.....

Links with other courses from the curriculum of the specialty
<ul style="list-style-type: none"> ▪ Builds upon knowledge acquired in/Depends on: <ol style="list-style-type: none"> 1. biology 2. chemistry and biochemistry 3. cytology and histology 4. anatomy and physiology, etc. ▪ Necessary for the following disciplines: <ol style="list-style-type: none"> 1. clinical immunology 2. clinical laboratory

3. **infectious diseases**
4. **internal medicine**
5. **surgical diseases**
6. **pediatrics, etc.**