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
Human Biology

Specialty	**MEDICINE**
Educational - qualification degree	**master**
Organizational form of education	**full-time**
Auditorial activity (Lectures/Seminars)	**105 (45/60)**
Extra-auditorial activity	**165**
ECTS- credits	**9**
Discipline type	**compulsory**
Semester/s of education	**first and second**
Semester of examination	**second**
Developer(s) of the Syllabus:	**Assoc. prof. Galina Yaneva,**
	Assist. prof. Svetla Slavova

Varna, 2024

ANNOTATION

Aims of the course	The program contains basic concepts of medical biology science, divided into four parts: General Biology, Genetics, Immunology and Parasitology. The main goal of the course of human biology is to acknowledge the students with the basic areas of medical biology (origin of life and animal and human evolution, parasitism like biologic process, general and molecular biology, general and molecular genetics, basis of immunology), which are directly connected with some medical problems. In this way that branch of knowledge assures optimal base to realize the position of human within the whole community of organisms. In the process of education with regards to the main accent, included in the curriculum, consisting of thematic units, the students should gain basic skills and knowledge through the active participation in lectures, seminars and practical exercises.

Outcomes for students at the end of the course:	
Competences	**1. Patient Care** **2. Medical Knowledge** **3. Practice-Based Learning and Improvement** **4. Interpersonal and Communication Skills** **5. Professionalism**
Competence group	**1. Patient Care** that is compassionate, appropriate, and effective for treating health problems and promoting health.
Knowledge	• for the prevention of vector-borne infections • for personal and public preventive efforts against single and multi-cell parasites • about venomous animals in Bulgarian fauna • for nutritional prophylaxis of certain commonly occurring infectious and parasitic diseases • biological factors of the workplace environment • the importance of immunoprophylaxis, vaccines and serums
Skills	• For providing first aid in cases of tick bites • For identifying bites from various arthropods • For developing measures for the prevention and control of the most significant parasitic and vector-borne diseases • For identifying key parasites of medical importance in humans • For collecting epidemiological data from individuals suffering from parasitic diseases • For developing measures for the prevention and control of HIV and sexually transmitted infections

	• For the prevention of certain reproductive issues within society
Competence group	**2. 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	• About the general principles and cellular foundations of life • About parasitism as a biological phenomenon (its origin, evolution, and ecological characteristics) and the interaction between parasites and their hosts • About the biological mechanisms involved in the pathogenesis of various human diseases • About the mechanisms of inheritance of genetic diseases • About the functioning of the immune system • About the genetic and immunological mechanisms of transplantation • About the main immunological reactions and techniques applied in medical practice • About the etiology, modes of transmission, and spread of parasitic diseases • About the biology of human populations • About the biology, ecology, and epidemiological significance of arthropods • About the biology of tumor growth and the molecular mechanisms of tumor development • About the ontogenesis of organisms and humans • About pharmacogenetics and its significance for medical practice • About the forensic importance of sex chromatin and alloantigens on human erythrocytes • About the essence of reproductive biology • About the indications for the application of assisted reproduction methods
Skills	• For solving biological and immunological cases • For collecting samples for parasitological studies • For applying genetic and immunological methods for diagnosis and prevention • For determining blood groups using test serums or test erythrocytes • For working with a light microscope • For preparing temporary and permanent microscopic slides
Competence group	**3. Practice-Based Learning and Improvement** that involves investigation and evaluation of their own patient care, appraisal, and assimilation of scientific evidence, and improvements in patient care.
Knowledge	• For searching, selecting, and analyzing educational and scientific information • For detection methods of parasites common in Bulgaria and worldwide • For screening methods for the early diagnosis of patients
Skills	• For working with an ELISA reader • For preparing samples for sex chromatin analysis

	• For applying some methods in genetics: genealogical, cytogenetic (preparation of karyograms), and population (studying the frequency of normal and mutant alleles in a population based on the Hardy-Weinberg principle) • For recording and comparing different fingerprint and palm dermatoglyphic patterns in women diagnosed with breast cancer • For selecting and analyzing relevant educational and scientific literature from specialized databases on a given topic in medical biology
Competence group	**4. Interpersonal and Communication Skills** that result in effective information exchange and teaming with patients, their families, and other health professionals.
Knowledge	• Latin language and medical terminology • Specific basic terminology in medical genetics, immunology, parasitology, embryology, and reproductive biology • Principles of scientific presentation in oral and written form
Skills	• For analyzing and presenting scientific results through reports, posters, or articles • For effectively using PowerPoint for data visualization
Competence group	**5. Professionalism,** as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.
Knowledge	• About the issues of aging and their impact on society • About the specific needs and challenges of people with Down syndrome, as well as their families, with the aim of providing quality and equitable medical care
Skills	-

Key competencies for lifelong learning[1], 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.	**X**
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)

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.	
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.	**X**
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.	**X**

Methods of education
▪ lectures ▪ seminars ▪ practicals and laboratory exercises, practical and creative problem solving, case studies, discussions, work with scientific literature, regulatory documents, databases, analyses, presentations.

Links with other courses from the curriculum of the specialty
▪ **Necessary for the following disciplines:** o **Medical Genetics, Oncology, Clinical Immunology, Cytology, Embryology, Infectious and Parasitic diseases, Microbiology, Transplantation Medicine, Epidemiology, Hygiene** ▪ **Other related disciplines:** o **Forensic medicine, Pharmacology, Haematology, Obstetrics and Gynaecology**