	UNIVERSITY OF BANJA LUKA **FACULTY OF MEDICINE**			
	UNDERGRADUATE STUDIES			
	Study Programme of	**MEDICINE**		
Course Unit Name	**Molecular Biology and Medicine**			
Type of Course Unit	**General Education**			
Course Unit Code	**Course Unit Status**	**Semester**	**Class Workload**	**Number of ECTS**
ISM22MBM	Elective	II	1L+1P	2
Members of Staff	Dr Stojko Vidović, full professor; Dr Vanja Vidović, assistant professor; Dr Irina Milovac, senior teaching assistant			

Eligibility Requirements	**Form of Requirements**
	As provided by the Rules of the First-Cycle Studies

Goals of the Course Unit

The goal of the course unit is for the students to get to know the fundamentals of molecular biology and its significance in medicine. The students will get to know the role of the macromolecules, nucleic acids and proteins, responsible for the flow and transfer of genetic information, the basic techniques of molecular biology and their significance to the possibility of the analysis of fundamental physiological processes and risk factors for the broad spectrum of the human diseases, and the prevention of diseases. Comprehending the genetic factors of frequent diseases and the assessment of the predispositions for their incidence through the study of gene interplay and impact of the environ.

Learning Outcomes (knowledge acquired):

Having completed the course unit, the students will have acquired knowledge on the role of the genes in the incidence of multifactory human diseases. This will allow them to describe and apply the knowledge on the interaction of genetic factors and the environ in assessing the predisposition for disease incidence and comprehending the possibilities of prevention. The students will have acquired knowledge on the fundamental manner of ascertaining the frequency and distribution of specific genetic traits in our population, as well as the methods of comparing the data against other, various squares.

Contents of the Course Unit:

Getting to know the basic techniques of molecular biology and genetics in detecting and characterizing genetic markers, types of inheritance, genetic predisposition to common diseases, approaches to assessing the impact of the genetical baseline on the incidence of common diseases, genetic polymorphisms as risk factors for the incidence of common diseases, multifactory inheritance, family genes, population genes. Basic characterization of genetically predisposed diseases: Various syndromes, neurofibromatoses, mucopolysaccharidoses, dystrophias, blood disorders and other metabolopathies. Getting to know the genetic principles underlying gene therapy, understanding methods used in gene therapy, as well as the progress and achievements of gene therapy in medicine.
Practical classes: study research: Laboratory orientation, getting to know basic methods of molecular genetics at the Laboratory for Molecular Biology and Genetics at the Centre for Biomedical Research.
Seminars: During the seminars, students independently cover selected topics in the field through writing seminar papers.

Teaching Methods:

The classes are given in the form of lectures, practicals, seminars, office hours, and independent student work.

Literature:

1. Основе молекуларне биологије: Г. Матић. Завет, Београд.
2. Молекуларна биологија 1: Д. Савић Павићевић, Г. Матић. ННК Интернационал, Београд.
3. Увод у генетичко инжењерство и биотехнологију: К. Бајровић и сар. ИНГЕБ, Сарајево.
4. Molekularna biologija u medicini: Timothy M. Cox i John Sinclair. Medicinska naklada, Zagreb.
5. Genes VII: B. Lewin. Oxford University Press Inc., New York.
6. Molecular Biology of the Cell: B. Alberts. Garland Publishing Inc., Philadelphia.
7. Genetics in Medicine: Thompson & Thompson. 8th Edition, Elsevier.

Examination Form:

Pre-Exam Duties		Final Exam		Total Points
Attendance	10	Oral / Written	50	100
Seminar paper	40			
Note for the Course Unit:				
Syllabus Designer: Prof. Dr Stojko Vidović				