

COURSE INFORMATION SHEET

University: Catholic University in Ružomberok	
Faculty: Faculty of Education	
Course code: KBE/Bi-BD106A/22	Course title: Molecular biology
Type and range of planned learning activities and teaching methods: Form of instruction: Lecture Recommended study range: hours weekly: 1 hours per semester: 13 Teaching method: on-site	
Credits: 1	Working load: 25 hours
Recommended semester/trimester: 3.	
Level of study: I.	
Prerequisites:	
Requirements for passing the course: During the semester, students complete several partial tests and tasks aimed at continuous assessment of the comprehensibility of the subject matter and with the aim of ensuring the continuity of the subject matter and the student's self-evaluation. At the end of the semester, they take a final exit written test, which will be used to determine the final evaluation of the subject. Subject assessment: 100 - 94% A 93 - 85% B 84 - 76% C 75 - 69% D 68 - 60% E 59 - 00% Fx	
Learning outcomes of the course: The aim of the subject is to obtain basic theoretical knowledge about the molecular nature of genetic information and the way it is realized in the cell After completing the course Molecular Biology, the student will acquire the following knowledge, skills and competencies: Know and understand the basics of the molecular structure and function of nucleic acids and proteins. Know the processes related to the transfer of genetic information from DNA to protein. Can effectively and creatively apply acquired knowledge to everyday life situations, from nature protection to individual health protection	
Course contents: Syllabus/Indicative Content: 1. History of molecular biology; relation between heredity, chromosomes and DNA 2. Characteristics of molecular biology, central dogma 3. Structure of the DNA molecule, biological information, gene and gene expression 4. Transcription in prokaryotic and eukaryotic cells 5. Characteristics of individual types of RNA and post-transcriptional modifications of hnRNA 6. Genetic code	

7. Amino acids and protein characteristics 8. Translation in prokaryotic and eukaryotic cells, post-translational modifications 9. Gene expression control 10. Replication in prokaryotic and eukaryotic cells, recombinant DNA 11. Classification of mutations, physical, chemical and biological mutagenic 12. Genome of individual forms of organisms 13. Basic overview of biotechnology in molecular biology					
Recommended or required literature: Rosypal, S.: Úvod do molekulární biologie I-IV, Brno 2003 Watson, J.D. et al. Molecular biology of the gene. Cold Spring Harbor Laboratory Press, 2008, 6th ed. Allison, L.A. Fundamental molecular biology. Malden: Blackwell, 2007 Griffiths A.J.F. et al. Introduction to genetic analysis, 10th ed., International ed., New York, N.Y. : W.H. Freeman , 2012 Stollárová, N. Molekulová biológia v praxi. Ružomberok, Pedagogická fakulta KU, 2003					
Language of instruction:					
Notes:					
Course evaluation: Assessed students in total: 22					
A	B	C	D	E	FX
13.64	4.55	4.55	22.73	27.27	27.27
Name of lecturer(s): Prof. RNDr. Peter Kubatka, PhD., RNDr. Mária Balážová, PhD.					
Last modification: 24.08.2022					
Supervisor(s): Guarantor: Administrátor Systému People responsible for the delivery, development and quality of the study programme: prof. ThDr. Rastislav Adamko, PhD., doc. Mgr. Marek Babic, PhD., doc. RNDr. Pavel Bella, PhD., prof. PaedDr. Mgr. art. Rastislav Biarinec, ArtD., prof. Irina Chelysheva, DrSc., prof. PaedDr. František Dlugoš, PhD., Mgr. Juraj Dvorský, PhD., prof. PhDr. Ingrid Emmerová, PhD., doc. Tatiana Korenkova, CSc., prof. PaedDr. Milan Ligoš, CSc., doc. Mgr. Eva Litavcová, PhD., doc. PaedDr. Peter Mačura, PhD., prof. PhDr. David Papajík, PhD., doc. Ing. Miroslav Saniga, CSc., prof. Nóra Séllei, PhD., DrSc., PhDr. ThLic. Martin Taraj, PhD., Prof. Ing. Peter Tomčík, PhD., prof. Dr. phil. fac. theol. Peter Volek, doc. Ing. Igor Černák, PhD.					