

Study Programme : Biology, Modul molecular biology			
Degree level: Bachelor degree			
Course Title: Eukaryotic Molecular Biology			
Professor: dr Jelena Purać			
Required Course: required (core course)			
Number of ECTS: 8			
Prerequisites: Introduction to Molecular Biology			
Course Objective: This course covers topics in the basic structure of eukaryotic genomes and the mechanisms by which genetic information is utilized, regulated, and altered. Students are also introduced to the novel methods in molecular biology research.			
Course Outcome: At the end of this course, students will be able to understand concepts basic to the functioning of eucaryotic cell. Students will be able to understand basic and more advanched molecular techniques which can help them to study biological phenomena their further work.			
Course Content: <i>Theoretical part</i> This course explores cell organization and subcellular structure. Topics to be covered include the evolution of the cell, the organization of eukaryotic genes and genomes; mechanisms underlying synthesis of DNA, RNA, and proteins, with an emphasis on regulation; chromosome structure and organization, functional genomics, and mechanisms of differential gene expression; protein synthesis, processing and regulation, protein sorting and transport; programmed cell death. Students are also introduced to the novel experimental techniques used in cell biology. <i>Practical part</i> Classes take the form of experiential exercises and video demonstrations. Students will learn some molecular techniques used for studying macromolecules, particularly proteins and nucleic acids.			
Reading List: James D. Watson, Tania A. Baker, Stephen P. Bell, Alexander Gann, Michael Levine, Richard Losick (2008) <i>Molecular Biology of the Gene</i> , 6th Edition, Pearson education Geoffrey M. Cooper and Robert E. Hausman (2009) <i>The Cell: A Molecular Approach</i> , 5th Edition, Sinauer Associates Inc. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter (2007) <i>Molecular Biology of the Cell</i> , 5th Edition, Garland Science			
Total hours:			
Lectures: 3	Practicals:	Other:3	Student research work:
Methods of instruction:			
Assessment (maximum number of points 100)			
Requirements	points	Final exam	points
Active participation in lectures	5	Practical exam	70
Active participation in practicals	10	Oral exam	
Test(s) or	15		
Pre-exam testing			
Remark:			