

<b>Study Programme:</b> BSc Biology			
<b>Course Unit Title:</b> Population genetics			
<b>Course Unit Code:</b> OB020			
<b>Name of Lecturer(s):</b> Full Professor Dr. Mihajla Đan; Assistant Professor Dr. Nevena Veličković			
<b>Type and Level of Studies:</b> Undergraduate studies			
<b>Course Status (compulsory/elective):</b> Elective			
<b>Semester (winter/summer):</b> Summer			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 6			
<b>Prerequisites:</b> None			
<b>Course Aims:</b> The aim of this course is to introduce students to the mechanisms of transmissions of genetic informations at the population level.			
<b>Learning Outcomes:</b> After successful fulfilling of pre-exam and exam obligations student can explain genetic variation within populations and how genetic structure of populations is influenced by mutation, migration, genetic drift and natural selection.			
<b>Syllabus:</b> <i>Theory</i> Genetic variability of natural populations. The Hardy-Weinberg equilibrium and factors that change allele frequencies in natural populations. Protein markers in populations genetics. Molecular markers (RFLP, PCR based markers, RAPD, AFLP). Extranuclear molecular markers. Population genomics. <i>Practice</i> Calculation of genetic variability parameters. Hardy-Weinberg equilibrium and deviation. Phylogenetic trees construction. Application of SSR molecular markers in population genetics. DNA sequence editing and analysis. Introduction to computer software: ARLEQUIN, BioEdit, MEGA, STRUCTURE, MrBayes.			
<b>Required Reading:</b> 1. Gillespie JH. Population Genetics A Concise Guide. The John Hopkins University Press, USA, 2004. 2. Hartl DL. A Primer of Population Genetics. Sinauer Associates, Inc., Sunderland, 1988. 3. Frankham R., Ballou JO, Briscoe DA. Introduction to Conservation Genetics. Cambridge University Press, 2002.			
<b>Weekly Contact Hours: 4</b>	<b>Lectures: 2</b>	<b>Practical work: 2</b>	
<b>Teaching Methods:</b> Lectures, computer labs			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	5	written exam	
Practical work	5	oral exam	60
Tests	30		
Seminar(s)			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			