

Course Unit Descriptor

<b>Study Programme:</b> Master of Science in Biology		
<b>Course Unit Title:</b> Phylogeography		
<b>Course Unit Code:</b> MB38		
<b>Name of Lecturer(s):</b> Dr Vesna Milankov, Dr Ljubinka Francuski Marčetić		
<b>Type and Level of Studies:</b> Master Academic Degree		
<b>Course Status (compulsory/elective):</b> elective		
<b>Semester (winter/summer):</b> Winter		
<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> 8		
<b>Prerequisites:</b> None		
<p><b>Course Aims:</b></p> <p>Phylogeography is a field of study concerned with the principles and processes governing geographic distributions of genealogical lineages. The Phylogeography course is the course concerned with relationships between gene genealogies, population demography and organismal history as well. Phylogeography as a multidiscipline covers the molecular evolutionary genetics, natural history, population biology, paleontology, historical geography and speciation analysis.</p>		
<p><b>Learning Outcomes:</b></p> <p>Students obtain a basic knowledge linking factors responsible for geographic pattern of molecular genetic diversity.</p>		
<p><b>Syllabus:</b></p> <p><i>Theory</i></p> <p>Historical geography; Geologic time scale; The history of Earth: Biological evidence; Intraspecies phylogeography: Methods of analyses; Spatial and temporal patterns of genetic diversity: Principles and processes responsible for geographic distribution of evolutionary lineages, Ecological factors in origin geographic distribution of features and cline of adaptive characteristics; Coalescent theory; Phylogenetic categories or relationship; Demography-Phylogeny connections; Intraspecific patterns in humans and other animals; Phylogeographic hypotheses; Genealogical concordance; Concordance and phylogeographic depth; Speciation processes and extended genealogy.</p> <p><i>Practice</i></p> <p>Genetic diversity: methods and molecular markers; Intraspecies taxa; Evolutionarily significant units; Species fragmentation and spatially structured populations: organization of genetic diversity, methods in study of fragmentation populations; Empirical intraspecific phylogeography: human analyses; Biogeographical analyses of genetic diversity of isolated and island populations; Molecular clock; Biogeographical history of taxa: postglacial expansion, islands and mountains.</p>		
<p><b>Required Reading:</b></p> <ol style="list-style-type: none"> <li>1. Avise, J.C. (2000): Phylogeography: The History and Formaiton of Species. Harvard University Press.</li> <li>2. Avise, J.C. (2004): Molecular Markers, Natural History, and Evolution. Sinauer Associates, Inc.</li> </ol>		
<b>Weekly Contact Hours:</b>	<b>Lectures:</b> 2	<b>Practical work:</b> 2
<p><b>Teaching Methods:</b></p> <p>video beam</p>		
<b>Knowledge Assessment (maximum of 100 points):</b>		

<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation		written exam	
Practical work		oral exam	70
Preliminary exam(s)		.....	
Seminar(s)	30		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.