

Study Programme : Ecology			
Degree level: Master degree			
Course Title: Phylogeography			
Professor: dr Vesna Milankov			
Elective Course:			
Number of ECTS: 8			
Prerequisites:			
Course Objective: 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.			
Course Outcome: Students obtain a basic knowledge linking factors responsible for geographic pattern of molecular genetic diversity.			
Course Content: <i>Theoretical part:</i> 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. <i>Practical part:</i> 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.			
Reading List: 1. Avise, J.C. (2000): Phylogeography: The History and Formation of Species. Harvard University Press. 2. Avise, J.C. (2004): Molecular Markers, Natural History, and Evolution. Sinauer Associates, Inc.			
Total hours:			
Lectures: 2	Practicals: 2	Other:	Student research work:
Methods of instruction: Video beam			
Assessment (maximum number of points 100)			
Requirements	points	Final exam	points
Active participation in lectures	10	Practical exam	
Active participation in practicals	30	Oral exam	60
Test(s) or			
Pre-exam testing			
Remark:			