

<b>Study Programme:</b> Ecology			
<b>Degree level:</b> Master degree			
<b>Course Title:</b> Evolution of Biological Diversity			
<b>Professor:</b> Dr Jasmina Ludoški			
<b>Required/Elective Course:</b> Elective			
<b>Number of ECTS:</b> 6			
<b>Prerequisites:</b> -			
<b>Course Objective:</b> The objective of the course Evolution of Biological Diversity is to consider the mechanisms that cause and shape recent and ancient diversity. The focus of this course is the synergistic effect of evolutionary mechanisms, quantification of genetic and phenotypic differentiation, as well as their correlation with the process of speciation.			
<b>Course Outcome:</b> Student acquires knowledge about the processes and mechanisms responsible for the diversification of the living world.			
<b>Course Content:</b>			
<i>Theoretical part</i>			
Evolutionary genetics of speciation. The units of diversity. Reproductive, genetic and ecological isolation. Correlation between isolation and genetic divergence. Correlation between genetic distance and genetic divergence. Evolutionary potential of natural populations. Effect of spatial and social structure. Sexual selection and speciation. Sexual selection and ecological diversity. Population differentiation without speciation. Sexual dimorphism. Development and generation of the phenotype- from genes to individuals. Factors that promote speciation. Phenotypic variation and species range. Hierarchical theory of selection- the necessity and difficulty. Geographic range size and speciation. Cryptic diversity. Rates of speciation in the fossil records. The evolution of diversity in ancient ecosystems.			
<i>Practical part</i>			
Speciation in different groups of animals and plants- examples. Sympatric morphs, populations and speciation in freshwater fish. Sexual and natural selection in bird speciation. Explosive speciation of African cichlid fishes.			
<b>Reading List:</b>			
1. Magurran, A.E., May, R.M. (1999) Evolution of biological diversity. Oxford University Press.			
2. papers			
<b>Total hours:</b>			
Lectures: 2	Practicals: 2	Other: -	Student research work: -
<b>Methods of instruction:</b>			
Video beam and overhead presentation			
<b>Assessment (maximum number of points 100)</b>			
<b>Requirements</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Active participation in lectures		Practical exam	
Active participation in practicals		Oral exam	70
Test(s) or			
Pre-exam testing			
Seminar	30		
<b>Remark:</b>			