

<b>Study programme:</b> PhD in Biology			
<b>Level:</b> doctoral degree			
<b>Course title:</b> Evolution and phenotypic plasticity			
<b>Lecturer:</b> Dr Jasmina Ludoški			
<b>Status:</b> elective			
<b>ECTS:</b> 15			
<b>Requirements:</b> -			
<b>Learning objectives</b> The aim of the course Evolution and phenotypic plasticity is to study the phenomenon of phenotypic plasticity, mechanisms and processes that lead and shape it, and its evolutionary significance. The course integrates knowledge of ecological genetics, developmental biology and evolutionary theory to understand how the interaction of genetic and environmental factors shaped organisms.			
<b>Learning outcomes</b> The acquisition of knowledge and critical understanding of the process of adaptive evolution of phenotypes			
<b>Syllabus</b> <i>Theoretical instruction</i> Phenotypic plasticity: the concept, reaction norm; Studying and understanding plasticity: empirical approach; Historical overview of phenotypic plasticity studies; The genetics of phenotypic plasticity: genetic variation of plasticity, genetic constraints, plasticity and heterozygosity, plasticity and developmental (in)stability, canalization and homeostasis; Molecular biology of phenotypic plasticity: molecular basis of phenotypic plasticity, concept of plasticity genes; Developmental biology of phenotypic plasticity: mechanisms, adaptive importance; Ecology of phenotypic plasticity: phenotypic plasticity as an adaptive strategy, adaptive phenotypic plasticity- empirical studies; Behavior and phenotypic plasticity: theoretical framework, case studies; Evolution of phenotypic plasticity; Theoretical biology of phenotypic plasticity: approaches to the modeling of genotype-environment interactions; Phenotypic plasticity as a central concept in evolutionary biology. <i>Practical instruction</i> Phenotypic variation in selected groups of animals and plants- the examples			
<b>Literature</b> 1. Pigliucci, M (2001) Phenotypic plasticity: beyond nature and nurture. The Johns Hopkins University Press. 2. scientific papers			
<b>Weekly teaching load</b>		Other:	
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5
<b>Teaching methodology</b> oral presentation, study of scientific papers			
<b>Grading method (maximal number of points 100)</b>			
oral exam (70), seminar (30)			