Study program: MSc Ecology
Study level: Master's studies
Course title: Ecological genetics
Course code: ME08
Teacher: Assoc. Prof. Dr. Mihajla Đan, Assis. Prof. Dr. Nevena Veličković, Assoc. Prof. Dr. Dubravka Milić
Course status: elective
ECTS:7
Requirements:
Course objectives: The aim of this course is to introduce students to prinicples of landscape genetics, ecological modeling and ecological genetics.
Learning outcomes   After successful fulfilling of pre-exam and exam obligations student can explain the key concepts of ecological genetics and understand to apply various molecular techniques to study ecological genetics questions in natural populations.
Syllabus   *Theoretical instruction*   Introduction to ecological genetics. Molecular markers in ecological genetics. Genetics of adaptations. Genetic variability in populations. Random and nonrandom mating. Changes in allele frequencies. Factors that change allele frequencies in populations. Population dynamics in changing environments. Landscape genetics. Genetic monitoring of natural populations. Ecological niche theory, interspecific interactions, species distribution.   *Teaching laboratory*   Genetic structure of natural populations. Genetic variability parameters. PCA and IBD analyses. Clustering methods in ecological genetics. Modeling in ecological genetics. Identity test. Similarity test. Ecological niche predictiona.
Literature   Conner J, Hartl D. A Primer of Ecological Genetics Sinauer Associates, Inc., USA, 2004.   Balkenhol N, Cushman S, Storfer A, Waits L. Landscape Genetics: Concepts, Methods, Applications. Wiley-Blackwell, 2015.   Lowe A, Harris S, Ashton P. Ecological Genetics: Design, Analysis and Application. Wiley-Blackwell, 2004.

Weekly teaching load	Lectures: 2	Teaching laboratory**: 2+4**

Teaching methods
lectures, practical lectures, computer labs, tuition

Evaluation of knowledge (maximum score 100)			
Pre-exam obligation	points	**Final exam**	points
Student engagement in lectures		Written exam	
Seminar		Oral exam	up to 60
Tests	Up to 40		
Practical laboratory			