Study Programme : BSc in Ecology	
Degree level: Bachelor degree	
Course Title: Animal Ecology	
Professor: dr Ester Popović	
Required/Elective Course: Required Course	
Number of ECTS: 7	
Prerequisites: Chordate Zoology	

Course Objective: introduction to relationships between organisms and ecological factors, Term and attributes of population, biocenosis, ecosystem and biome characteristics, Role of Man in Biosphere and ecological changes.

Course Outcome: Students are to aquire fundamental knowledge of terminology and methods used in Animal Ecology and apply them in their research.

Course Content:

Theoretical part

Abiotic,biotic and anthropogenic ecological factors. Effects of ecological factors and ecological valence. Life form and classification. Ecologically equivalent species. Adaptive radiation. The ecological niches. Climatic factors. Bergman, Alen's and Groger's rule. Phenological phenomena, hibernation, estivation and diapausa. Chemistry of the environment. Edaphic factors. The anthropogenic factor. Classification of abiotic factors: competition, mutualism, commensalism and protocooperation. Interaction of predator-prey, parasite-host. The concept of structural elements of the population. Population density, age, sex structure, habit, health status of the population. Birth rate, death rate. Spatial distribution, areal activity andterritoriality. Migration, emigration and immigration. Temporary and permanent groups. Innate, learned behavior, communication among animals. Population theory. Ecological radiation. Inter and intraspeciation factors of population growth. The concept and structure of the biocenosis. Stratification of biocenosis. Types of diet and feed. The food chain. Seasonal, day-night and lunar periodism. Ecosystem. Ecosystem metabolism. Organic productivity of ecosystems. Succession and transformation of ecosystems. Cultural frame. Marine ecosystems. Freshwater ecosystems. Terrestrial biomes.

Practical part

Determining the ecological valence and cardinal points in relation to temperature and salinity. Determining the width of ecological niche, their overlapping and time of using niche. The density of population and methods for its determination: absolute, relative and statistical methods. Mark's and Lincoln-Petersen's method for determining the density of population. Application of statistical methods for determining the density of the population-cumulative method. Mortality tables. Tables of survival. Age structure of population: the concept and criteria for determining the age groups. Age structure of population: determination of a stable structure of the population age pyramid and drawing. Determination of sex index in the population. Determining the age and growth of fish in length. Definition and determination of the basic types of spatial distribution. Shannon-Viver's method of determining the index of diversity. Determination of saprobity index.

Reading List:

1. Stanković, S. (1961): Ekologija životinja (2nd edition), University u Belgrade, Insitute for textbook publishing, Belgrade.
2. Odum, E.P. (1971): Fundamentals of ecology. W. B. Saunders company, Philadelphia, London-Toronto.

Total hours:				
Lectures: 4	Practicals:	Other: 2	Student research work:	

Methods of instruction:

Audio-visual lectures, theoretical and mathematical exercises

Assessment (maximum number of points 100)			
Requirements	**points**	**Final exam**	**points**
Active participation in lectures	5	Practical exam	
Active participation in practicals	5	Oral exam	
Test(s) or	20		
Pre-exam testing			