

<b>Study Programme:</b> Agronomy		
<b>Course Unit Title:</b> Special animal genetics		
<b>Course Unit Code:</b> IP3		
<b>Name of Lecturer(s):</b> Full professor Snežana Trivunović, research associate Dragan Nikšić, assistant professor Ljuba Štrbac		
<b>Type and Level of Studies:</b> Doctoral academic studies		
<b>Course Status (compulsory/elective):</b> Elective		
<b>Semester (winter/summer):</b> Winter		
<b>Language of instruction:</b> Serbian, but individual consultations and materials are offered to incoming students in English		
<b>Mode of course unit delivery (face-to-face/distance learning):</b> face-to-face		
<b>Number of ECTS Allocated:</b> 14		
<b>Prerequisites:</b> None		
<b>Course Aims:</b> The goal of the course is for students to expand their previous knowledge in the field of genetics, by getting to know certain specificities related to the genetics of certain species (cattle, pigs, sheep, goats, horses, and poultry).		
<b>Learning Outcomes:</b> The ability of students to independently apply the acquired knowledge in scientific and research work in the field of quantitative and molecular genetics of certain species, primarily with the aim of genetic improvement of animal populations.		
<b>Syllabus:</b> <i>Theory</i> Genetic aspects of animal systematization. Cytogenetics and chromosomal maps. Animal genome. Genetic variation of animal color. Genetics of morphological traits. Genetics of reproductive traits. Genetics of behavior. Genetics of food conversion. Genetics of growth and quality of meat. Genetics of milk yield traits. Hereditary diseases and resistance to diseases. Genetic improvement of animals. <i>Practice</i> Procedures for DNA isolation. DNA quality control. PCR amplification of DNA. Checking the success of PCR amplification. Analysis of results obtained by PCR analysis. Procedures for determining gene polymorphism at the DNA level. Getting to know the karyotypes of certain animal species and changes in the number and structure of chromosomes. Cytogenetic analyses. Work in computer programs for the analysis of genetic and phenotypic variability of animals.		
<b>Required Reading:</b> 1. Garrick D., Ruvinsky A. (2014): The Genetics of Cattle, 2nd Edition, CABI 2. Womack J. (2012): Bovine Genomics, John Wiley & Sons. 3. Rothschild M. F., Ruvinsky A. (2011): The Genetics of the Pig, CABI 4. Chowdhary B. P. (2013): Equine Genomics, John Wiley & Sons 5. Bailey E. F., Brooks S. A. (2013): Horse Genetics, CABI 6. Piper L., Ruvinsky A. (1997): The genetics of sheep, CABI 7. Khatib H. (2015): Molecular and Quantitative Animal Genetics, John Wiley & Sons 8. Muir W. M., Aggrey S. E. (2003): Poultry Genetics, Breeding, and Biotechnology		
<b>Weekly Contact Hours:</b>	<b>Lectures: 3</b>	<b>Practical work: 5</b>
<b>Teaching Methods:</b>		

The theoretical part of the teaching is conducted in the form of lectures with the use of presentations and consultations. The practical part of the teaching is carried out in the laboratory for molecular genetics and in the computer laboratory with the application of modern data processing software.

**Knowledge Assessment (maximum of 100 points):**

<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	-	written exam	-
Practical work	-	oral exam	50
Preliminary exam(s)	-	.....	
Seminar(s)	50		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.