Course Unit Descriptor

Study Programme: Agronomy	
Course Unit Title: Linear methods in Animal Breeding	
Course Unit Code: 3DAI2078	
Name of Lecturer(s): Trivunović J. Snežana, Full Professor	
Type and Level of Studies: Doctoral Academic Studies	
Course Status (compulsory/elective): elective	
Semester (winter/summer): summer	
Language of instruction: English	
Mode of course unit delivery (face-to-face/distance learning): face-to-face	
Number of ECTS Allocated: 10	
Prerequisites: None	

Course Aims:

To introduce students with modern linear methods in genetics and breeding of animals. The development of computer and information technology influenced the collection of data about the animals and the formation of databases as well as choice and modelling of methods for evaluation of breeding values in populations thereby creating the conditions for the comparison of genotypes among herds and modeling of genetic and economic progress.

Learning Outcomes:

Training students for the application and use of accessible database for breeding animals, and student training the application of linear methods in breeding animals in scientific research.

Syllabus:

Theory

The development of linear methods. Analysis of variance and covariance (LS, ML, REML). Evaluation of breeding values (BLUP and AM). Selection indexes. International evaluation of breeding values (MACE).

Practice

The development of linear methods. Analysis of variance and covariance (LS, ML, REML). Evaluation of breeding values (BLUP and AM). Selection indexes. International evaluation of breeding values (MACE).

Required Reading:

1. Vidović Vitomir (2009): Principi i metodi oplemenjivanja životinja.

2. Vidović Vitomir (2010): Teorija oplemenjivanja životinja.

3. Bulmer, E. (1997): Mathematical Theory of Quantitative genetics.

4. Morder R. A., Thompson R. (2005): Linear Models For The Prediction Of Animal Breeding
   Values

5. Freund R., Ramon C. Littell, W. Stroup (2002): SAS for Linear Models

Weekly Contact Hours:	**Lectures:** 4	**Practical work:** 6

Teaching Methods:

The theoretical part of study is done with the use of films and presentations that have been prepared so that students have visual representation the teaching units. Practical work is carried out use of computers and software in the field of genetics and biotechnology in livestock production.

Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Active class participation	10	written exam	
Practical work		oral exam	50
Preliminary exam(s)	20	…….	
Seminar(s)	20		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			