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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme Accreditation*ANIMAL PRODUCTION* |

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| Course: Animal Production | *Animal Breeding* |
| Course id: 3OST3O11 |
| Number of ECTS: 7 |
| Teacher:  | Snežana Trivunović, PhD, associate professorDragomir Lukač, MSc, teaching assistant |
| Course status | Mandatory |
| Number of active teaching classes (weekly) |
| Lectures: 4×15=60 | Practical classes: 3×15=45 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | Livestock production, Animal genetics |
| 1. **Educational goal**

Education and training students to work directly in the production, as well as to improve the yield and quality of livestock products through genetic improvement and learning about the production capacity of existing and creation of new lines of breeds and hybrids of all kinds of domestic animals. The student should acquire a basic knowledge of modern technologies and biotechnology breeding and crossing of animals in order to achieve genetic progress. After passing the exam, the student is prepared for applying the general principles of breeding animals and to upgrade knowledge about the specifics of breeding some species. |
| 1. **Educational outcomes**

The formation of professionals with academic qualifications who has significantly broadened and deepened knowledge of breeding animals in relation to the knowledge acquired in high school, as well as the knowledge necessary for understanding the scientific basis of the field of genetics and breeding. |
| 1. **Course content**

*Lectures*The importance of breeding animals. The genetic base of breeding animals. The interaction of genotype and environment. Variability and sources of genetic variation. Genetic parameters. Directions in breeding animals. The resemblance between relatives (kinship and farming related). The importance of crossing methods. The chromosome engineering. Basic principles and effect of selection. Mixed linear models and their importance in breeding. Biotechnology and biotechnology techniques in breeding.*Practical classes**a) Labs:* Restoring the basic concepts of genetics, species and breeds of domestic animals. Kinship and farming related. Repeatability. Assessment of variance components and heritability. Regression of offspring on parents and heritability. Correlations (genetic, phenotypic and environmental). Evaluation of the success of selection. Evaluation of the impact of correlated traits. Breeding value. Selection indices. The mixed model estimates of breeding values (BLUP, AM). Heterosis. The economic effects of different breeding programs. *b) Field exercises:* Field exercises and practical work (parent accounting, organization and selection activities, organization of tests, evaluation of breeding animals of the eye, calculating breeding values) in cattle, swine, sheep, goat and poultry farms, fish ponds and in centers for higher education. |
| 1. **Teaching methods**

The theoretical part of the training is conducted with the use of films and presentations that have been prepared so that students have a visual representation of lessons. Practical classes are conducted with the use of computers and software in the field of animal breeding and the field by visiting the manufacturer's quality breeding stock and centers of AI. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Lecture attendance | Yes | 10 | *Oral part of the exam* | Yes | 30 |
| Test | Yes | 30 |  |
| Exercise attendance | Yes | 20 |
| Term paper | Yes | 10 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Vidović V. | Principi I metodi oplemenjivanja životinja | Poljoprivredni fakultet, Novi Sad | 2009 |
|  | Trivunović S. | Oplemenjivanje životinja - Praktikum | Poljoprivredni fakultet, Novi Sad | 2012 |
|  | Bourdon R.M. | Understanding Animal Breeding | Prentice Hall, New York | 2000 |
|  | Griffiths A.J., Gelbart W.M., Levontin R.C., Miller J.H. | Modern Genetic Analysis | Freeman and Company, New York | 2002 |

 Table 5.2 Course specification