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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 Genetics* |
| Course id: 3OST3O11 |
| Number of ECTS: 6 |
| Teacher:  | Snežana Trivunović, PhD, associate professorDragomir Lukač, MSc, teaching assistant |
| Course status | Mandatory |
| Number of active teaching classes (weekly) |
| Lectures: 3×15=45 | Practical classes: 2×15=30 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None |
| 1. **Educational goal**

Students will become familiar with the basic principles and laws to inherit both quantitative and qualitative traits of animals in order to understand the properties of the genetic and phenotypic level. The student should acquire knowledge about the transfer of properties from parents to offspring that. Transfer from one to the next generation of characteristic forms of metabolism potentially contained in a cell whose implementation required certain environmental conditions. This would improve the yield and quality of livestock products through genetic improvement of existing and creation of new lines and hybrids of all kinds of domestic animals. |
| 1. **Educational outcomes**

After completing this course the student acquires knowledge of basic principles to inherit both qualitative and quantitative traits and characteristics of the threshold, and thus gain knowledge of genetics, which are needed for tracking other items on the program of study. The development of theoretical and practical ideas in the field of genetics and breeding and improvement of environmental conditions that are adapted to the industrial model of production and keeping of animals, a student should achieve progress in raising the genetic and production as well as the economic potential of the animal population. |
| 1. **Course content**

*Lectures*Figure cells and chromosomes. Cell division and fertilization. The structure and function of the gene. Mendelian inheritance legality of qualitative and quantitative traits. Multiple alleles and gene interactions. Legality of inheritance-related genes and traits. Crossing-over. Sex determination and sexually related properties. The inheritance anomaly, disease and drug resistance in animals, genetic susceptibility and resistance to pathogens. Structural and numerical aberrations of chromosomes. Genotypic and phenotypic distributions of quantitative traits. Probability and x² test. Genetic basis of heterosis and its use. Genetics of populations. Quantitative genetics and quantitative traits in animals (significant loci and markers for economically important traits in domestic animals). Animal Genetics and Breeding. Ethical aspects of modern animal genetics, cloning and genetic engineering in animals.*Practical classes*Practical classes are held during the exercise program and followed the lecture topic, working with concrete practical examples and assignments. Writing term papers accompanying methodological units listed in the course content. Exercises include laboratory work as well as testing knowledge orally and in writing. |
| 1. **Teaching methods**

The theoretical part of the training is conducted with the use of presentations that are prepared so that students have a visual representation of lessons. Practical classes are conducted through presentations, seminars, and other modern teaching and laboratory resources. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Lecture attendance | Yes | 5 | *Written part of the exam-tasks and theory* | Yes | 20 |
| Test | Yes | 30 | *Oral part of the exam* | Yes | 30 |
| Exercise attendance | Yes | 5 |  |
| Term paper | Yes | 10 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Vidović V., Lukač D. | Genetika životinja | Poljoprivredni fakultet, Novi Sad | 2010 |
|  | Vidović V., Stupar M. | Molekulska genetika | Poljoprivredni fakultet, Novi Sad | 2010 |
|  | Kraljević Balalić M., Petrović S., Vapa Lj. | Genetika, teorijska baza i zadaci | Poljoprivredni I prirodno-matematički fakultet, Novi Sad | 1991 |
|  | Delić N., Stanimirović Z. | Principi genetike | Fakultet veterinarske medicine, Belgrade | 2004 |

Table 5.2 Course specification