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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationBACHELOR ACADEMIC STUDIES *(Animal science)* |

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| Course:Animal Science | *Feedstuffs and feedtechnology* |
| Course id: 3OST4O16 |
| Number of ECTS: 5 |
| Teacher: | Miloš Beuković, PhD, full professorNikola Puvača, MSc, research 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 | Forage crops |
| 1. **Educational goal**

Detailed introduction to feedstuffs used in animal nutrition, as well as the technology of production of certain feedstuffs and feed mixtures. The acquisition of practical knowledge in the field of feed quality control and application of acquired knowledge about the nutritional value of feed in preparation of complete meals for animal nutrition. |
| 1. **Educational outcomes**

Ability of students to independently produce quality feed for animals and ability to control quality of produces feed. |
| 1. **Course content**

*Lectures*Introduction. The task of the importance of the subject to status of livestock production and the environment. Animal feed, feed mixtures. The composition of nutrients and the role of nutrients. Classification of nutrients. The method of determining the nutritional value of animal feed. Chemical analysis of animal feed. Methods of improving the nutritional value of feed, dry and hydrothermal. Feedstuffs of plant origin: forages - green nutrients; dry feed (technology and quality); dry coarse feed. Root, tubers nutrients and juicy fruits - characteristics in terms of nutritional value. Silage and haylage - technology, fermentation, and quality assessment. Concentrated feed: Grain - Grain cereals, grain legumes, other grain production. By-products of the food industry – mil industry, oil, sugar, alcohol, starch. Feed of animal origin: Milk and products of milk - skimmed milk powder, whey, casein and lactoalbumin. Products of processing fish. By-products of slaughter industry - Meat, blood and feather meal. Products rendering plant - Meat, meat-bone, bone meal. Yeasts and other cellular sources of protein - Yeast, SC - proteins, plankton. Nutritional additives - Amino acids and NPN, vitamins, macro- and trace elements. No nutritional additives - technologically, to increase digestibility, growth stimulants, regulators of metabolism, probiotics and prophylactics. Industrial production of animal feed.*Practical classes**a) Labs:*The role of standardization in the economy: the quality and quality control, quality assurance according to ISO 9000 standards, deviations in the production of animal feed. Determination of nutritive value of animal feed - Weende method. Moisture and dry matter. Crude ash. Crude protein, albumin and NSI. Raw cellulose. Crude fat, FNEM. Macro and trace elements - Determination of Ca. Determination of P. Determination of Fe. Testing silage quality - organoleptic, determination of fatty acids, pH, NH3, sugar and minimum quality score. Anti-nutritive substances - urease and glucosinolates. Determination ofNaCl and acid degree in mixtures. The buffer capacity of nutrients. Microscopic analysis of nutrients. Chromatography on - amino acids. Review and assessment of individual groups of nutrients.  |
| 1. **Teaching methods**

Oral presentation, slides, ppt-presentation, practical work in feed mixers, chemical analysis of animal feed, consultations, seminars. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Lecture attendance | Yes | 5 | *Oral part of the exam* | Yes | 40 |
| Test | Yes | 40 |  |
| Exercise attendance | Yes | 10 |
| Term paper | No | 5 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Louisiana. Dept. Of Agriculture And Immi, Louisiana Agricultural Experiment Station | Feed Stuffs Report | BiblioBazaar | 2011 |
|  | J. McNab, Midlothian. N.  | Poultry Feedstuffs: Supply, Composition, and Nutritive Value | CABI Pub. | 2002 |