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| Course: Animal Science | *Industrial feed production* |
| Course id: 8MST1I16 |
| Number of ECTS: 6 |
| Teacher: | Miloš Beuković, PhD, full professorNikola Puvača, MSc, research assistant |
| Course status | Elective |
| Number of active teaching classes (weekly) |
| Lectures: 2 × 15 = 30 | Practical classes: 2 × 15 = 30 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None |
| 1. Educational goal

Detailed introduction to feedstuffs management, technique and technology of production and technology improvement of industrial production. |
| 1. Educational outcomes

Ability of students to work independently in a feed mill and the production of quality feed for animals. |
| 1. Course content

*Lectures*Introduction. The factors that caused the emergence and development of feed industry. The needs of animals and their breeders when it comes to animal feed. Nutrients - Sources of nutrients. The plant, animal and synthetic sources of protein. Additives - Accessories forage mixtures. Nutritional additives - Amino acids and NPN, vitamins, macro- and trace elements. No nutritional additives-Technology, to increase digestibility, growth stimulants, regulators of metabolism, probiotics and prophylactics, flavorings, fragrances and flavors, antioxidants, emulsifiers, preservatives, organic acids, drugs, buffers, dyes and other additives. Methods of improving the nutritional value of feed before integration in feed mixtures: Cold and hot, dry and hydrothermal methods: peeling, milling and grinding, cold rolling, steaming and rolling, dab, toasting, micronization, extruding, pelleting, germination grain, separation of protein and carbohydrate fractions, improving the nutritional value of forage. Techniques and technologies for the production of feed mixtures. Mills for grinding grain and milling of nutrients. Mixers and mixing of nutrients and supplements. Pellet mills and pelleting of feed mixtures. Practical production of feed mixtures. Perspectives and directions for improving the technology of industrial production of animal feed.*Practical classes*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 fodder -Weende method. Macro- and microelements. Anti-nutritive substances-urease and glucosinolates. Determination of NaCl and the degree of acid in mixtures. The buffer capacity of nutrients. Microscopic analysis of feed. Review and assessment of individual groups of nutrients. Biological testing of feed. |
| 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 | 50 |
| Test | Yes | 20 |  |
| Exercise attendance | Yes | 10 |  |
| Term paper | No | 15 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Bekrić Vitomir | Industrijska proizvodnja stočne hrane | Institute of corn „Zemun Polјe“, Zemun – Beograd | 1999 |
|  | Stanaćev Vidica, Kovčin Stanimir | Hraniva i tehnologija stočne hrane i osnovi ishrane domaćihživotinja - Praktikum. | Faculty of Agriculture, Novi Sad | 2003 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationMASTER ACADEMIC STUDIES *Animal science* |
| Table 5.2 Course specification |