

Study Programme: ANIMAL PRODUCTION		
Course Unit Title: FEEDSTUFFS AND FEED TECHNOLOGY		
Course Unit Code: 19.AIM017		
Name of Lecturer(s): Ass. Prof. Dejan Beuković, PhD		
Type and Level of Studies: UNDERGRADUATE ACADEMIC STUDIES		
Course Status (compulsory/elective): Mandatory		
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: 6		
Prerequisites: -		
Course Aims: Detailed introduction to the nutrients used in animal nutrition, as well as the technology of production of some nutrients and feed mixtures. Acquisition of practical knowledge in the field of feed quality control and application of acquired knowledge of the nutritional value of nutrients, in the preparation of complete meals, within animal nutrition.		
Learning Outcomes: Students ability for independent production of quality animal feed and quality control.		
Syllabus: <i>Theory</i> Introduction. The task and significance of the subject for the status of livestock and the environment. Fodder, nutrients, mixtures. Nutrient composition and the role of nutrients. Classification of feedstuffs. Method of determining nutritional value fodder. Chemical analysis of animal feed. Methods of improving the nutritional value of nutrients, dry and hydrothermal. Nutrients of plant origin: bulky nutrients - green nutrients; dry nutrients (technology and quality); dry roughage. Root, tuberous nutrients and juicy fruits - characteristics from the nutritional aspect values. Silage and haylage - technology, fermentation, quality and evaluation. Concentrated feedstuffs: Granular - Grain cereals, legumes, other granular nutrients. By - products of the food industry - mill industry, oil, sugar, alcohol, starch industry. Nutrients of animal origin: Milk and processed milk products - Skimmed milk powder, whey, casein and lacto albumin. Fish processing products. By-products slaughter industries - Meat, meat and bone, blood and feather flour. Rendering products - Meat, meat and bone meal. Yeasts and other cellular sources of protein - Animal yeast, SC - proteins, plankton. Nutrient additives - Amino acids and NPN, vitamins, microelements.. Non nutritious additives - technological, to increase digestibility, growth stimulants, metabolism regulators, probiotics and prophylaxis. Industrial production of animal feed. <i>Practice</i> The role of standardization in the economy: quality and quality control, securing quality according to ISO 9000 series standards, deviations in fodder production. Determination of nutrients values of fodder - Weende method. Moisture and dry matter. Raw ash. Crude proteins, albumins and NSIs. Raw cellulose. Crude fat, BEM. Macro and micronutrients - Determination of Ca. Determination of P. Determination of Fe. Silage quality testing - Organoleptic, determination of LMK, pH, NH ₃ , sugar minimum and quality assessment. Antinutritive substances - urease and glucosinolates. Determination of NaCl and acidity in mixtures. Buffer nutrient capacity. Microscopic analysis of nutrients. Paper chromatography - amino acids. Review and evaluation individual groups of nutrients.		
Required Reading:		
Weekly Contact Hours:	Lectures: 3	Practical work: 3
Teaching Methods:		

Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	-	written exam	20
Practical work	15	oral exam	30
Preliminary exam(s)	35	
Seminar(s)	-		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.