Biotechnical Faculty / ANIMAL PRODUCTION / LIVESTOCK FARMING AND ENVIRONMENT

Course:	LIVESTOCK FARMING AND ENVIRONMENT			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
10767	Mandatory	3	6	3+1+0
Programs	ANIMAL PRODUCTION			
Prerequisites	no conditionality			
Aims	Introducing of students with different systems of agricultural production and their impact on the environment, the importance of monitoring environmental pollution, the impact of the processing of livestock products, i.e. industry on the environment, the treatment of waste from agro-industry and ecological standards and legal regulations related to the protection of the agricultural environment			
Learning outcomes	Defines and explains different systems of agricultural production and understands their impact on the environment, • Understands Life Cycle Assessment procedures, Conceptual models for assessing the relationship between livestock farming and the environment (PSR and DPSIR systems) • Recognizes, analyzes and evaluates indicators of environmental pollution whose source is agricultural production and processing, • Detects the source of pollution, determines the situation and takes measures to mitigate or eliminate pollutants originating from primary agricultural production (fertilizers, sediments, animal waste, salts and pesticides, storage, loading and unloading of food, accommodation and feeding of animals, health maintenance and treatment...) • Understands and applies Biosecurity procedures, Best Management Practice and Integrated Pest Management, • Detects the source of pollution, determines the situation and takes measures to mitigate or eliminate pollutants originating from agricultural processing facilities (meat processing, milk processing, fruit and vegetable processing, starch, sugar, confectionery and beer industries). Knowledge and application of the HACCP system			
Lecturer / Teaching assistant	prof. dr Slavko Mirecki, mr Olga Kopitović			
Methodology	lectures, teaching exercises, seminar work on a given topic, consultations			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction – animal husbandry vs. environment; losses of natural resources; agricultural production systems, monitoring;			
I week exercises	Examples of indicators for environmental monitoring in primary livestock production and processing facilities			
II week lectures	Conceptual models for assessing the relationship between animal husbandry and the environment: PSR System, DPSIR system, indicators of environmental pollution, animal husbandry revolution			
II week exercises	Examples of PSR and DPSIR systems			
III week lectures	Monitoring - an important factor in solving the problem of environmental pollution, deforestation, nutrient balance. The diversity of domestic animals and the impact on the environment			
III week exercises	Application of the PSR system in case of deforestation,			
IV week lectures	The impact of agricultural activities on the environment, the biggest pollutants: fertilizers, sediments, animal waste, salts and pesticides			
IV week exercises	Examples: eutrophication, desertification, acid rain, greenhouse gases...			
V week lectures	Life Cycle Assessment and Carbon footprint on livestock farms			
V week exercises	Colloquium 1			
VI week lectures	Impact of animal husbandry activities on the environment: Storage, loading and unloading of food, accommodation of animals			
VI week exercises	Examples of proper and improper storage, loading and unloading of food and housing of animals			
VII week lectures	Impact of animal husbandry activities on the environment: cleaning and fertilization, health maintenance and treatment. Biosecurity on the farm			
VII week exercises	Examples of proper and improper cleaning and fertilization, health maintenance and treatment, and Biosecurity on the farm			
VIII week lectures	Impact of animal husbandry activities on the environment, procedures with animal waste - dangers and prevention.			
VIII week exercises	Principles and examples of Best Management Practice, Integrated Pest Management			

IX week lectures	Impact of animal husbandry activities on the environment: odor control on the farm, pest control
IX week exercises	Visit to the livestock farm.
X week lectures	Procedures with the corpses of dead animals on the farm: burial, burning, composting,
X week exercises	Colloquium 2
XI week lectures	The impact of agricultural processing capacities on the environment: meat processing, milk processing
XI week exercises	A visit to a dairy/cheese factory
XII week lectures	The impact of agricultural processing capacities on the environment of fruit and vegetable processing, starch, sugar, confectionery and beer industries
XII week exercises	COD and BOD values of wastewater from certain branches of the food industry
XIII week lectures	Basics of Good Agricultural Practice. Sustainable agriculture. Concept and principles of GAP
XIII week exercises	Examples of GAP
XIV week lectures	Prerequisite programs: GAP, GHP, GDP, GMP... Standard operating procedures: SPO and SSOP
XIV week exercises	Examples of SOP and SSOP documentation
XV week lectures	HACCP system. Terms, definitions, history. 7 HACCP principles, 12 steps of the HACCP system
XV week exercises	HACCP implementations in cheese making (examples)
Student workload	

Per week	**Per semester**
6 credits x 40/30=8 hours and 0 minuts 3 sat(a) theoretical classes 0 sat(a) practical classes 1 excercises **4 hour(s) i 0 minuts** of independent work, including consultations	Classes and final exam: **8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts** Total workload for the subject: **6 x 30=180 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **36 hour(s) i 0 minuts** Workload structure: **128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)**
Student obligations	attending teaching exercises, writing a seminar paper, taking colloquiums, taking the final exam
Consultations	2 hours a week, dates to be arranged with students
Literature	Literatura: 1. Selimbašić. V., Đonlagić, N., Montero, J.A. i Marquez, M. A. C., (2004): Uticaj poljoprivrede i proizvodnje hrane na okoliš 2. de Haan, C., Steinfild, H. and Blackburn, H.,(1996) : Livestock and environment:Finding a balance , FAO
Examination methods	Activity during lectures (0-4 points) o Exercise activity (0-4 points) o Seminar work (0-7 points) o I colloquium (0-20 points) o II colloquium (0-20 points) o Final exam (0-45 points) A passing grade is obtained if 50 points are accumulated cumulatively. Grade number of points: A (≥ 90 to 100 points); B (≥ 80 to < 90); C (≥ 70 to < 80); D (≥ 60 to < 70); E (≥ 50 to < 60); F < of 50
Special remarks	
Comment	

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points