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| **STUDY PROGRAMME:** | **Professional Undergraduate Study Programme *Agriculture*** Specific field of study: Zootechnics |
| **Course:** | **MACHINES AND EQUIPMENT IN ANIMAL HUSBANDRY** |
| **Course code:** 273303**Course status**: compulsory | **Semester: III** | **ECTS credits: 4** |
| **Course holder:**  | **Miomir Stojnović,** M. Sc., senior lecturer |
| **Course associates:**  | **Marija Jakuš Hrestak**,M.Eng.Agr., assistant |
| **Modes of delivery:** | **Number of hours**  |
| **Lectures** | 45 |
| **Excersises,** | 30 |

**Course objectives:** enable students to acquire competencies for selecting and evaluating the application of machines and equipment in animal husbandry.

**Course content**

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|  |  | **Modes of delivery:** | **Places of delivery** |
|  | **Course units**  | **L, E** |
|  | ***Introduction to the subject*** - the role and significance of the mechanization of technological processes in animal husbandry, development trends  | 3 L | Classroom |
|  | ***Machines and equipment for grinding and mixing animal feed*** - hammer mills and other types of mills, animal feed mixers | 4 L, 2 E | Classroom, practicum |
|  | ***Animal feed plants*** - machines and equipment in animal feed plants, animal feed production technology, visit to an animal feed plant | 4 L, 4 E | Classroom, practicum, field exercises |
|  | ***Machines and equipment for supplying domestic animals with water*** - pumps, water tower system, hydrophores, waterers - group and individual | 4 L, 2 E | Classroom, practicum |
|  | ***Machines for mowing and drying hay -*** mowers, mower-conditioners, tedders and rakes, balers, hay handling equipment, hay dryers, calculations of hay drying | 5 L, 4 E | Classroom, practicum |
|  | ***Machines for green fodder, silage, haylage and dehydrated fodder -*** self-loading trailers, forage harvesters, silage trailers, silos, plants for dehydrating alfalfa - stationary and mobile | 5 L, 4 E | Classroom, practicum |
|  | ***Machines and equipment for cattle feeding -*** machines for extracting silage from horizontal and vertical silos, mixer trailers, automatic feeding stations for cattle, electric fence | 4 L, 2 E | Classroom, practicum |
|  | ***Machines and equipment on cattle farms -*** types of housing, free-stall barns, tie-stall barns, ventilation systems, microclimate, manure handling equipment, storage systems for solid manure and slurry, machines and equipment for composting, biogas plants | 4 L, 2 E | Classroom, practicum |
|  | ***Machine milking of cows, sheep and goats -*** principles of machine milking, types of milking machines, automatic milking systems, technical and operating characteristics of the milking machine, machine milking technique | 4 L, 2 E | Classroom, practicum |
|  | ***Machines and equipment on pig farms -*** types of housing, microclimate, ventilation systems, heating and cooling systems, feeding equipment, waterers, manure handling equipment | 4 L, 4 E | Classroom, practicum |
|  | ***Machines and equipment on poultry farms –*** types of housing, microclimate, ventilation systems, heating and cooling equipment, feeding systems, waterers, manure handling equipment, process automation | 4 L, 4 E | Classroom, practicum |
| **In total** | **45+30** **(L+E)** |  |

**L=Lectures, E=Excersises**

**Learning outcomes (LO)**

LO 1. Valorize the significance and specifics of the use of machines and equipment in livestock farming

LO 2. Critically assess the construction and principle of operation of individual machines and equipment in animal husbandry

LO 3 Assess the suitability of different machines and equipment in certain branches of animal husbandry

LO 4. Select the necessary capacities and structure of machines and equipment in animal husbandry

Course holder:

Miomir Stojnović, M. Sc., senior lecturer

Križevci, July 2024