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| **STUDY PROGRAMME:** | **Professional Undergraduate Study Programme *Agriculture*** Specific field of study, Zootechnics  |
| **Course:** | **CATTLE RAISING** |
| **Course code:** 273300**Course status**: compulsory  | **Semester: III** | **ECTS credits: 5** |
| **Course holder:**  | **Dražen Čuklić,** Ph.D., professor of professional studies |
| **Course associates:**  | Goran Mikec, M.Eng.Agr, assistant |
| **Modes of delivery:** | **Number of hours**  |
| Lectures | 30 |
| Excersises, | 15 |
| Seminars | 15 |
| Practical training | 15 |

**COURSE OBJECTIVES:** To train participants to independently organize cattle production or advise on production on farms or larger farms.

**COURSE CONTENT**

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| **Course units**  | **Modes of delivery:** | **Places of delivery** |
| **L, E, S** |
| 1.
 | **General characteristics of cattle breeding**: Significance of cattle breeding. The number of cattle and the size of cattle production. Cattle production systems. | 3 | - | - | Lecture Room |
|  | **The origin of cattle**: A chronology of the development of cattle. Domestication (domestication) of cattle. Migration | 2 | - | - | Lecture Room |
|  | **Natural properties of cattle**: General natural properties. Zoological characteristics of cattle. Specific properties of cattle. Body structure and functions of the body | 3 | - | - | Lecture Room |
|  | **Cattle breeds**: Division of cattle breeds. Dairy, meat and combined breeds of cattle. Distribution and breed structure of cattle in the Republic of Croatia. | 3 | - | 2 | Lecture Room |
|  | **Cattle reproduction**: Specifics of reproduction in cattle breeding. Hereditary basics of fertility. Reproductive cycle in cattle. Time of mating heifers, cows. Fertilization and carrying – pregnancy. Calving.  | 3 | - | 2 | Lecture Room |
|  | **Registry records:** Registry systems, single bovine registry system, stud books, control of cattle production characteristics | - | 3 | - | HAPIH Service |
|  | **Juvenile breeding:** Basic characteristics of rearing young cattle. Procedure with the calf after partus. Keeping care and feeding calves.  | 2 | - | - | Lecture Room |
|  | **Beef production:** Breeds of cattle for meat production. Growth as the material basis of meat production. The influence of gender on growth. The Heroes. Cattle fattening. Fattening calves for white meat. Fatten calves with concentrate. The Heroes. Fattening qualities and slaughter quality. Accommodation of fattening animals. Production and exploitation of manure. | 3 | - | 1 | Lecture RoomPracticum of the University of Applied Sciences |
|  | **Cattle evaluation**: Evaluation of cattle using the Linear scoring method. Evaluation of Simmental and Holstein Frisien breeds in the cattle practicum of the Secondary School of Agriculture in Križevci. | - | 10 | - | Lecture RoomInternshipSGS |
|  | **Cow's Milk Production**: The Concept and Definition of milk. The chemical composition of milk. Composition and properties of individual components. Physical properties of milk. Milk production – the mammary gland and its function. Physiology of milk secretion. Milking technique. Determination of the basic and target price of milk  | 3 | - | 2 | Lecture RoomInternshipSGS |
|  | **Hoof cleaning**: The theoretical part (hoof anatomy), the purpose of cleaning. Practical part of hoof cleaning in the cattle practicum of the Križevci Secondary School of Agriculture | 1 | 2 | - | Lecture RoomInternshipSGS |
|  | **Genetic Construction of Cattle Production Capacity:** Production Control. Control of milk production. Control of beef production. Estimation of cattle breeding values. Methods of estimating breeding value. Breeding goals in cattle breeding. Cross-breeding in cattle production. | 3 | - | 2 | Nova Geneticsd.o.o. |
|  | **Project assignment:** Practical application of farm management | 2 | - | 6 | Lecture Room |
|  | **Evaluation** | 2 | - | - | Practicum SGS |
| **In total** |  |

**Practical training**

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|  | **Course units** | **Hours** |
| **1.** | Visit to HAPIH - Croatian Agricultural Agency - regional service Križevci. Getting to know breeding and selection work in cattle breeding in the Republic of Croatia.. | 2 |
| **2.** | Visit to the Advisory Service of the Republic of Croatia - Križevci branch The state and perspectives of the development of cattle production. | 2 |
| **3.** | Visit to companies for the sale of seeds (genetic material) - Križevci: Improvement of breeding work using better quality bulls and application of artificial insemination. | 2 |
| **4.** | Professional practice in the cattle practicum of the University: Professional work in milking cows. Feeding dairy cows. | 9 |
|  | **In total** | **15** |

**L=Lectures, E=Excersises, S=Seminars, PT=Practical training**

**Learning outcomes (LO)**

LO 1. Evaluate cattle breeds and their productive characteristics

LO 2. Recommend breeds for specific cattle production

LO 3. Organize efficient cattle milk production

LO 4. Organize efficient combined cattle production

LO 5. Evaluate various breeds of cattle using the linear method

LO 6. Plan improvements on a cattle farm using a practical example

Course holder:

Dražen Čuklić, Ph.D., professor of professional studies

Križevci, July 2024