

Study Programme: <i>ANIMAL SCIENCE</i>
Course Unit Title: <i>MILK PRODUCTION</i>
Course Unit Code: 19ANM036
Name of Lecturer(s): PhD Ksenija Čobanović, Associate professor
Type and Level of Studies: UNDERGRADUATE ACADEMIC STUDIES
Course Status (compulsory/elective): Mandatory
Semester (winter/summer): winter
Language of instruction: Serbian
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated: 5
Prerequisites: None
Course Aims: Theoretical and practical knowledge and skills in the field of production of milk and milk products.
Learning Outcomes: The formation of professionals with academic qualifications who have expanded the knowledge necessary for understanding the scientific basis of livestock production - the production of milk and milk products. This knowledge provides the student with expertise for the independent management of milk production on the farm, the agricultural advisory service, and the like.
Syllabus: <i>Theory</i> The development of the dairy industry. Biosynthesis of milk. Lactation. Chemical composition of milk. Physical and physico-chemical properties of milk. Micro-organisms in milk and dairy products. The inhibitory properties of milk. Pollution and falsification of milk. The composition and properties of certain types of milk. Hygiene in the dairy industry. Milking. Milk as food. Dairy-legal provisions. The primary treatment of milk. Milk as a raw material. Reception of milk, heat treatment of milk, separation, homogenization, and deodorizing. Production of consumer milk (pasteurized and sterilized). Production of fermented products, cheese, processed cheese, ice cream, and milk powder. Whey, a by-product. Utilization of whey. Whey as a pollutant. Projecting in the dairy industry. <i>Practice</i> a) Labs: Sampling of milk and dairy products. Determination of the chemical composition of milk: the content of fat, nitrogen materials, lactose, and mineral substances. Determination of physical-chemical properties of milk. Acidity. Density. Dry matter of milk. Determination of hygienic quality of milk. Bio-test. Antibiotics. Preservatives. Rennet-fermentation test. Making products under laboratory conditions: yogurt, kefir, production of cheese (soft, semi-hard, and hard), and melted cheese. System of milk payments. Quality rating of dairy products. b) Field exercises: Visiting dairies and getting to know the process, equipment, and machines for the reception of milk, to produce pasteurized and sterilized milk, fermented milk products, cheese, and ice cream.

Required Reading:

1. Ivica Vujičić (1985): Mlekarstvo, Univerzitet u Novom Sadu, Poljoprivredni fakultet.
2. Tratnik, Lj., Božanić, R. (2012): Mlijeko I mliječni proizvodi. Hrvatska mljekarska udruga, Zagreb.
3. Čobanović, K. (2023): Mlekarstvo - Praktikum. Poljoprivredni fakultet, Novi Sad.

Weekly Contact Hours:**Lectures: 3****Practical work: 3****Teaching Methods:**

Lectures, presentations, demonstrations, consultations, work in dairies and laboratories

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	
Practical work	5	oral exam	60
Preliminary exam(s)	20	
Seminar(s)	10		

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