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**Course title: TECHNICAL AND TECHNOLOGICAL PROGRESS IN DAIRY INDUSTRY**

ECTS credit allocation (and other scores): 3

Semester: autumn

Level of study: : ISCED-7 - second-cycle program EQF-7

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 30h lectures / 30h classes

Course coordinator/ Department and e-mail: dr hab. Jaroslaw Kowalik, prof. UWM / Department of Dairy Science and Quality Management, j.kowalik@uwm.edu.pl

Type of classes: classes and lectures

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**SUBSTANTIVE CONTENT**

**CLASSES:** Technical and technological progress, in the production of milk, beverages and dairy concentrates, butter and high-fat products, and Cheese and tvarog cheese. Functional foods and additives. Dairy products with regard to the health-promoting properties of the components of milk. Methods of quality control and evaluation of raw materials and products Dairy products. Quality management systems in milk processing. Characteristics of technological and technical solutions used in the dairy industry - field classes.

**LECTURES:** Current trends in the development of dairy production. New technologies and techniques in dairy production. Functional foods. Substances Additives. Basics and principles of predictive microbiology. Methods estimation of the quality of milk and its products. Quality management – risk assessment.

**Learning purpose:** Transfer of theoretical and practical knowledge of advances in technology. Technology and analytics in the production of milk and dairy products, and their modification. Development of skills in creative work on issues of dairy production development, considering the perspectives of the use of modern techniques and technologies and analytical methods. Developing skills and attitudes for self-learning, communication and cooperation in a group.

**ON COMPLETION OF THE STUDY PROGRAMME THE GRADUATE WILL GAIN:**

**Knowledge:** Student knows and understands the definitions and characteristics and ways of making the selection of modern technological and technical solutions in the production of dairy products with typical and modified ingredients. Knows and understands the directions and principles for describing the techniques and procedures used to evaluating raw materials and dairy products and the effectiveness and effects of processes on the physical and chemical characteristics of raw materials, products and study material.

**Skills:** Student is able to propose the application of new techniques and technologies and analytical methods to evaluate the effectiveness of the technological process and evaluation of the quality of milk and its products. Student is Able to develop and present a selected topic in the field of advances in technology, engineering and analytics.

**Social Competencies:** - Student is ready for the conscious need of further education in the field of advances in the selected food industry and contemporary requirements of the profession. Student is ready to actively and creatively participate in discussions concerning technical and technological progress in the dairy industry.

**Basic literature:**

1) Different authors - student's choice, 2) Smith J., Charter E., Functional Food Product Development, wyd. WILEY-BLACKWELL. A John Wiley & Sons, Ltd., 2010 ; 3) Gösta Bylund, Dairy processing handbook, ISBN 10: 9176111326 , wyd. Tetra Pak Processing Systems AB, 2015

**Supplementary literature**

1) , Information, scientific articles and book connected with the course (domestic and foreign databases - ScienceDirect, ResearchGate etc.)

The allocated number of ECTS points consists of: 62 contact hours with an academic teacher: Student's independent work: 13