UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN

Faculty of Food Sciences

Course title: TECHNOLOGY OF BUTTER AND HIGH-FAT PRODUCTS

ECTS credit allocation (and other scores): 7

Semester: spring

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

Branch of science: Agricultural sciences

Language: English

Number of hours per semester: 60

Course coordinator/ Department and e-mail: Maria Baranowska, Department of Dairy Science and Quality Management; mbb@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Evaluation of raw material, preparation of cream, preliminary treatments in the butter production process. Butter production technology using the periodic method, butter production by alternative methods - NIZO, BOOS, IBS and SMR. Assessment of liquid starters and acidifying-flavoring additives used in butter production. Quality assessment. Manufacture and assessment of butter-like products (technological possibilities of modifying the composition and properties of milk fat). Assessment of the quality and durability of butter and butter-like products. Butter production by continuous method. Industrial production of butter and butter-like products (mixes) - field classes.

Learning purpose: Transfer of knowledge about: processing of milk fat, structure and properties of milk fat, stages of the process of making butter and butter-like products used in it. Acquiring the skills of making butter and butter-like products by periodic and continuous method and assessing the correctness of the technological process and the quality of the finished product, proper interpretation of the results obtained. Developing the skills of active participation in the production process.

On completion of the study programme the graduate will gain:

Knowledge: Knows and understands: the composition and physicochemical properties of milk fat; the technological process of making butter and fat mixes; ways to ensure quality of butter.

Skills: Is able to produce butter and spreads using the batch and continuous method, knows the research methods used to assess butter quality and properly interpret the results obtained.

Social Competencies: Is aware of the continuous replenishment of acquired knowledge and skills in order to optimize technological processes and adapt to the changing labor market.

Basic literature:

Walstra P., 2003, Physical Chemistry of Foods, Marcel Dekker, New York .
Tamime, A. Y., 2009, Dairy fats and related products, Blackwell Publishing Ltd, Oxford.
Fox P.F, 1983, Developments in dairy chemistry-2, Lipids. APPLIED SCIENCE PUBLISHERS LID.
Fox P.F., Uniacke-Lowe T., McSweeney P.L.H., O'Mahony J.A., 2015, Milk Lipids, in Dairy Chemistry and Biochemistry, Springer International Publishing, p 69-144

Supplementary literature:

MANUAL OF METHODS OF ANALYSIS OF FOODS, 2012, MILK AND MILK PRODUCTS, FSSAI, NEW DELHI.

MANUAL OF METHODS OF ANALYSIS OF FOODS, 2015, OILS AND FATS. FSSAI, NEW DELHI.
J. M. Evers, 1999 Determination of fat in butter - A review. Bulletin IDF 340, 3-15.
Dairy Processing Handbook, Tetra Pak, https://dairyprocessinghandbook.com/chapter/butter-and-dairy-spreads.
STANDARD FOR BUTTER, Codex Standard 279-1971, Revision 1999. Amendment 2003, 2006, 2010.
Butter Manufacture, https://www.uoguelph.ca/foodscience/book/export/html/1687- 28.10.2019.
Butter Production Process, 2017, The butter flow chart, http://cem.com/en/butter-production-process.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 60

Student's independent work: 115