Study Programme: Food Engineering

Course Unit Title: Selected Chapters of Cheese Technology

Course Unit Code: DPI23

Name of Lecturer(s): Full Professor Mirela Iličić, Associate Professor Katarina Kanurić

Type and Level of Studies: Doctoral Academic Degree

Course Status (compulsory/elective): Elective

Semester (winter/summer): Winter

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to face

Number of ECTS Allocated:10

Prerequisites: None

Course Aims:

Students of doctoral studies are trained to introduce innovations, advanced operations and processes in the field of cheese technology.

Learning Outcomes:

The objective of this course is the introduction of students with modern scientific and practical achievements in the field of modern trends in cheese technology.

Syllabus:

Theory

The mechanism of milk transforming in cheese. Proteolytic enzymes and rennet coagulation. Secondary / non-enzymatic phase of coagulation and syneresis. Structure and rheological properties of acid coagulated gel. Starter culture in cheese technology: lactic acid bacteria, propionic acid bacteria, culture of strains *Brevibacterium linens* and culture with surface moulds. Application of membrane separation technology to cheese production . Salt in cheese-Physical, chemical and biological aspects. Lipolysis, proteolysis, catabolism of fatty acid and amino acids in cheese during ripening. Enzymes for accelerating cheese ripening. Rheology and texture of cheese. Microstructure of cheese. Nutritional aspect of cheese. Bioactive components in cheese. Cheese yield. Technical and economic analysis of cheese production. Functional additives in the production of cheese (substrates of fats, medicinal herbs, spices, etc.). Cheeses for specific consumer categories. Cheese as ingredients of food. Cheese analogues. Factors that affect the quality of cheese.

Practice

Search, processing, analysis and discussion of achievements in contemporary scientific and technical literature in the field of cheese technology. Selection and processing of data and preparation of seminar .

Required Reading:

1. Fox, P. F., Mc Sweeney, P. L. H., Cogan, T. M., Guinee, T. P. : Cheese, Chemistry, Physics and microbiology-General aspects, third edition, vol 1, 2004.
2. Fox, P. F., Mc Sweeney, P. L. H., Cogan, T. M., Guinee, T. P. : Cheese, Chemistry, Physics and microbiology - Major Cheese Groups, Third Edition, Vol 2, Elsevier, 2004.

Weekly Contact Hours:	**Lectures: 4**	**Practical work: 2**

Teaching Methods:

Lectures and students group work.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	
Practical work	10	oral exam	50
Preliminary exam(s)	10	…….	
Seminar(s)	25		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			