Milk and Milk Products Science and Technology

SCHOOL	ENVIRONMENT				
ACADEMIC UNIT	FOOD SCIENCE AND TECHNOLOGY				
LEVEL OF STUDIES	UNDREGRADUATE				
COURSE CODE	FST503 SEMESTER 5				
COURSE TITLE	MILK AND MILK PRODUCTS SCIENCE AND TECHNOLOGY				
INDEPENDENT TEACHII	INDEPENDENT TEACHING ACTIVITIES				
if credits are awarded for separate components of the course, e.g.			TEACHING	CREDITS	
lectures, laboratory exercises, etc. If the credits are awarded for the whole			HOURS		
of the course, give the weekly teaching hours and the total credits					
	Lectures		2		
Laboratory exercise		2			
Total		4	6		
Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).					
COURSE TYPE general background, special background, specialised general knowledge, skills development PREREQUISITE COURSES:	Specialized -	general knowled	dge		
	0 1				
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek				
IS THE COURSE OFFERED TO ERASMUS STUDENTS					
COURSE WEBSITE (URL)					

LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.

Consult Appendix A

- Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education
 Area
- Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B
- Guidelines for writing Learning Outcomes

Upon successful completion of the course the student will be able to:

- Know and describe the composition of milk and the changes that occur in milk and its components during processing
- Determine the factors that affect milk and dairy products during the production stage
- Outline the physical properties of milk
- Understand the process of converting milk into its various products.
- Perform the necessary chemical and other analyzes on the raw and auxiliary materials and on the final products.
- Learn hygiene issues, nutritional value, packaging, safety and quality assurance.
- Acquire knowledge for the production and evaluation of various dairy products.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the

necessary technology

Adapting to new

situations

Decision-making

Working independently Team work

Working in an international environment Working in an interdisciplinary environment Production of new research ideas Project planning and management Respect for difference and multiculturalism Respect for the natural

environment

Showing social, professional and ethical responsibility and sensitivity to

gender issues

Criticism and self-criticism

Production of free, creative and inductive thinking

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Others...

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- 1. Adapting to new situations
- 2. Decision-making
- 3. Working independently
- 4. Team work
- 5. Criticism and self-criticism
- 6. Production of free, creative and inductive thinking
- 7. Search for, analysis and synthesis of data and information, with the use of the necessary technology

(1) SYLLABUS

SYLLABUS

Content of theoretical course:

Structure - milk composition, production and utilization of milk, Factors that affect the composition and amount of milk, Antibiotics – Mastitis, Milk ingredients, Physical properties of milk (Organoleptic characteristics, acidity, pH, specific gravity, freezing point, redox potential, etc.), Nutritional value of milk, Milk treatments, Heat Treatments of milk, Production of milk on the farm, quality control of milk, Cheese, Yogurt, Sour milk, Kefir, Butter, Cream, Ice cream

Content of laboratory course:

Physicochemical characteristics of raw milk (pH, titrated acidity, indirect methods for assessing acidity, stability of fresh milk, specific gravity), Identification of main milk components, Checking the quality of raw milk, Check on standardization problems, Control of the degree of heat treatment of milk, Mech anism of coagulation of milk, Sensory evaluation of dairy products, Production of cheese, yogurt, butter, ice cream.

SYLLABUS

TEACHING and LEARNING METHODS - EVALUATION

DELIVERY Face-to-face, Distance learning, etc.	Face-to-face				
TEACHING METHODS The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc. The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS	Activity Lectures Laboratory practise	Semester workload 78 26			
STUDENT PERFORMANCE EVALUATION Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open- ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other Specifically-defined evaluation criteria are given, and if and where they are accessible to students.	Language of evaluation: Greek Methods of evaluation: Progress work during the semester (formative) Final examination (Concluding) Theoretical part: multiple choice questionnaires, short-answer questions, open-ended questions, problem solving. Laboratory part: multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, laboratory work. (20% laboratory work reports, 80% exams) Final grade: 60% theoretical grade and 40% laboratory grade				

ATTACHED BIBLIOGRAPHY

- Mantis, I.A., Papageorgiou, K.D., Fletouris, I.D., Aggelidis, S.A. (2015). Hygiene and technology of milk and its products. Publication: Kyriakidis S.A.
- Kechagias, X., Tsakali, E. (2017). Science and technology of milk and dairy products. Publication: New Technologies
- Kaminarides, S., Moatsou, G. (2009). Milk. Publication: Embryo
- Varnam Alan H., Sutherland Jane P. (2008). Γάλα και προϊόντα γάλακτος. Εκδόσεις: Στέλλα Παρίκου & ΣΙΑ ΟΕ
- Tamine A. (2009) Milk Processing and Quality Management, Wiley-Blackwell
- Walstra, P., Walstra, P., Wouters, J.T.M., Geurts, T.J. (2005). Dairy Science and Technology, Second Edition. CRC Press
- Anil Kumar Puniya (2015). Fermented Milk and Dairy Products. CRC Press
- Robinson, R., Britz, T. (2008). Advanced Dairy Science and Technology. Wiley-Blackwell

Performance Statistics of the last 2years							
Grade (descending order)	(descending frequency		sum of success rates per class				
SCIENCE AND TECHNOLOGY OF MILK & THEIR PRODUCTS							
10	9	16%	16%				
9	18	32%	48%				
8	17	30%	79%				
7	6	11%	89%				
6	6	11%	100%				
	56	100%					