

Milk and Dairy Technology (I000137)

Course size (nominal values; actual values may depend on programme)

Credits 4.0 Study time 120 h Contact hrs 60.0 h

Course offerings and teaching methods in academic year 2019-2020

A (semester 1)	English	microteaching	2.5 h
		guided self-study	13.75 h
		practicum	12.5 h
		group work	7.5 h
		lecture	23.75 h

Lecturers in academic year 2019-2020

Dewettinck, Koen	LA23	lecturer-in-charge
Tzompa Sosa, Daylan Amelia	LA23	co-lecturer

Offered in the following programmes in 2019-2020

	crdts	offering
Bachelor of Science in Food Technology	4	A
Master of Science in Food Technology	4	A
Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)	4	A
Exchange Programme in Bioscience Engineering: Food Science and Nutrition (master's level)	4	A

Teaching languages

English

Keywords

Milk, processing, dairy products, quality

Position of the course

This product oriented course deals with the technology of dairy products. Knowledge of general food technology and engineering is applied onto dairy products. Attention is given to the study of the raw material, modification and processing steps and quality aspects of end products. Practical sessions comprise analytical experiments, experimental work with pilot equipment and sensory analysis of dairy products.

Contents

1. Chemical and physical properties of milk

1.1 Carbohydrates

1.2 Lipids

1.3 Proteins

1.4 Minor components

2. Dairy Technology

2.1 Primary treatments of milk

2.2 Fermented products

2.3 Fat rich products

2.4 Cheese

2.5 Concentrates and powders

Initial competences

Basic knowledge food chemistry

Final competences

- 1 Explain the physicochemical properties of milk
- 2 Describe the production of different milk derived products

- 3 Assess the effect of processing on the quality characteristics of dairy products.
- 4 Critically evaluate the production process of dairy products
- 5 Write a scientifically sound, high-quality report and present it.
- 6 Integrate theoretical concepts in the practical sessions
- 7 Perform chemical analyses on dairy products

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Guided self-study, group work, lecture, microteaching, practicum

Extra information on the teaching methods

The theory will be given by means of lectures. Slides with comments are available as study material. For the practical exercise the students will perform experiments and analyses in the lab.

The students elaborate on a case study in group which is presented to the group (microteaching).

Learning materials and price

Slides and practical notes will be available on Ufora.

References

- BYLUND, G. (2003) Dairy Processing handbook. Tetra Pak Processing systems, Lund, Sweden.
- FREDRICK, E. (2011) Fat crystallization and partial coalescence in dairy cream: role of monoacylglycerols.
- SPREER E. (1998) Milk and Dairy product technology. Marcel Dekker, inc, New York.
- WALSTRA, P.; GEURTS, T.J.; NOOMEN, A.; JELLEMA, A. & VAN BOEKEL M. A. J. S. (1999) Dairy Technology - Principles of Milk Properties and Processes. Marcel Dekker, inc. New York / Basel.
- WALSTRA, P; WOUTERS, J.T.M.; GEURTS, T.J. (2006) Dairy science and technology. CRC Press Taylor & Francis, Boca Raton, Florida, USA.

Course content-related study coaching

Possibility to consult the lecturers or teaching assistants after the lectures and practical sessions or on appointment.

The (practical) exercises are guided by a teaching assistant.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Oral examination

Examination methods in case of periodic evaluation during the second examination period

Oral examination

Examination methods in case of permanent evaluation

Participation, assignment, peer assessment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

An oral exam is organized. Several open questions will be given to the students. The students have time to prepare their answers.

Calculation of the examination mark

Evaluation of the case study: report, presentation and peer-review: 30%

Oral exam 70%

Students who eschew periodic evaluations for this course unit will be failed by the examiner.