

Course syllabus

Mejeriprocesser Dairy Processing

KLTF05, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED B/K

Date of Decision: 2023-04-18

General Information

Elective for: B5-lm, K5, MLIV2

Language of instruction: The course will be given in English on demand

Aim

The aim of the course is to give scientific background and fundamental knowledge of traditional and new technological processes within the dairy industry.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be able to describe traditional and new technological processes within the dairy industry
- be able to describe production technology and processing lines for consumer milk, fermented milk products, cheese, butter and spreads, milk powder and ice cream
- be able to produce dairy products and be able to value analysis of chemical and microbiological properties
- have a comprehension of industrial hygiene in the dairy industry and quality assurance
- be able to explain process design and process calculations in the dairy industry
- describe relations between milk and health

Competences and skills

For a passing grade the student must

- be able to estimate and analyse technological processes in the dairy industry

- be able to describe relations between milk composition and process technological properties
- be able to value and analyse the importance of processing parameters during production of dairy products
- be able to describe relations between processing, design and products quality
- be able to write and orally explain technological processes within the dairy industry for various target groups
- be able to describe and discuss results from laboratory experiments and the fundamental background of the results in oral presentation as well as in a well-structured technical report

Judgement and approach

For a passing grade the student must

- be able to independently search and value information on dairy processes in reference literature, scientific papers and electronic references
- critical evaluate information on dairy processing
- critical evaluate information on relations between properties of milk and effects of processing

Contents

- production technology and processing lines of consumer milk, fermented milk products, cheese, butter and spreads, milk powder and ice cream
- membrane processes
- industrial hygiene and quality assurance
- packaging
- automation
- processing design and process calculations
- milk and health
- legislation
- laboratory experiments: production of cheese, yoghurt and butter as well as cleaning and hygienic control.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination, study visits and laboratory exercises. The final grade is based on written examination and laboratory exercises.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0119. **Name:** Written Examination.

Credits: 5. **Grading scale:** TH. **Assessment:** Passed written examination.

Code: 0219. **Name:** Study Visits.

Credits: 0. **Grading scale:** UG. **Assessment:** Active participation.

Code: 0319. **Name:** Laboratory Exercises.

Credits: 2,5. **Grading scale:** UG. **Assessment:** Accomplished laboratory exercises and approved laboratory reports.

Admission

Assumed prior knowledge: KBKA10/KBK011 Biochemistry or KBKA05 Technical Biology.

The number of participants is limited to: 24

Selection: Completed university credits within the programme. Priority is given to

students enrolled on programmes that include the course in their curriculum.

The course overlaps following course/s: KLT065

Reading list

- Walstra, P; Wouters, J.T.M. and Geurts, T.J.: Dairy Science and Technology. CRC, Taylor and Francis, 2006, ISBN: 0824727630. 2nd edition.
- Dairy Processing Handbook, Third edition. Tetra Pak Processing Systems AB, 2015.
- Handouts.

Contact and other information

Course coordinator: Professor Marie Paulsson, Marie.Paulsson@food.lth.se

Course coordinator: Dr Maria Glantz, maria.glantz@food.lth.se

Course homepage: <https://www.ple.lth.se/en/>

Further information: The teaching consists of lectures, laboratory exercises and study visits. The course is intensive during 3 weeks and is given together with commissioned education. Study visits organized during the course are compulsory. In case of legal impediment, the student has to accomplish an individual assignment with an equivalent content.