



Agenda

1. Welcome – by Jens Termansen
2. Presentation of new internships – by Anne-Sofi Christiansen
- 3. Competency level of MSc interns – by Henrik Sigumfeldt, UCPH**
4. The potential of the companies – by Arla Foods and Novonesis
5. Questions
6. Next steps + subsequent tasks/considerations – by Jens Termansen

'New' dairy internship on MSc in Dairy Science and Technology

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What's the difference?

- Until now, students have either done their dairy internship at BSc level or as the first subject on their MSc programme.
- However, students who start the MSc programme in September 2024 will follow a new programme where they do (primarily) compulsory subjects for one year, after which some of the students who have not previously done an internship will have the opportunity to apply for a dairy internship.
- This means that these students will start their dairy internships with a few more subjects in their toolbox.

MSc degree, if you are awarded an internship

| | Block 1 | Block 2 | Block 3 | Block 4 |
|----------------------|--|----------------------------|---|--|
| 1 st year | Microbiology of Fermented Food and Beverages | Dairy Microbiology | Food Processing | Dairy Product Technology 1 |
| | Food Quality Management and Control | Elective | Molecular and Functional Properties of Milk | Sustainable Innovation in Food Science |
| 2 nd year | Internship/Dairy internship | | Thesis | |
| 3 rd year | Elective | Dairy Product Technology 2 | | |
| | Elective | Elective | | |

*Students who are assigned an internship on their MSc programme do a single course, Dairy Product Technology 2, after their thesis, but this is a compromise in terms of optimising the specialisation for our own BSc students (see last slide)

What skills do the students have when they start their internship?

- The students have done all these subjects before they start.

(The courses below link directly to the UCPH course database.)

- [Microbiology of Fermented Food and Beverages](#)
- [Food Quality Management and Control](#)
- [Dairy Microbiology](#)
- [Food Processing](#)
- [Molecular and Functional Properties of Milk](#)
- [Dairy Product Technology 1](#)
- [Sustainable Innovation in Food Science](#)

Competency profile of a dairy engineer I

Knowledge: The students have basically achieved the highlighted points before the internship

- How milk production (feeding, milking) affects the quality and composition of milk
- Unit operations in the dairy industry and how these affect the components and properties of milk and dairy products
- The physical chemistry behind the stabilisation of milk and dairy products
- The equipment used for manufacture of dairy products
- The relevant aspects of chemistry, biochemistry, microbiology, physics and technology in relation to the production and processing of dairy products
- The physiology and genetics of lactic acid bacteria of relevance to foods, as well as basic genetic manipulation of lactic acid bacteria
- The important organisms and pathogens involved in the spoilage of dairy products
- The entire value chain approach ('quality by design' philosophy)
- The practical daily running of a dairy plant

Competency profile of a dairy engineer II

Skills: The students have achieved these skills to some extent before the internship

- Apply and evaluate methods for assessing the quality of milk, cheese and processed milk products
- Analyse and evaluate dairy processing and production
- Work in a microbiological laboratory with physiological and molecular methods, as well as handling simple bioinformatics tools

Competency profile of a MSc in Dairy Science and Technology III

Competences: The students to a very large extent acquire these competences through the combination of spending time in industry and at university

- Participate in public discussions of the impact of dairy production
- Participate in the working environment of a dairy plant
- Interact with professionals in the dairy industry and associated organisations and participate in a project-based working environment
- Develop new dairy products and technologies
- Relate knowledge from basic sciences to the entire production chain for dairy products
- Evaluate how the final product quality is affected by all stages in the chain from farm to table
- Evaluate control systems in order to achieve safe dairy products

The optimised programme for the majority of our students

- We still expect the majority of our dairy engineers to come from our own BSc programme. The academic progression has therefore been optimised for them.

| | Block 3 | Block 4 | Block 1 | Block 2 |
|----------------------|---|--|--|----------------------------|
| 1 st year | Food Processing | Dairy Product Technology 1 | Microbiology of Fermented Food and Beverages | Dairy Microbiology |
| | Molecular and Functional Properties of Milk | Sustainable Innovation in Food Science | Food Quality Management and Control | Dairy Product Technology 2 |
| 2 nd year | Elective | Elective | Thesis | |
| | Elective | Elective | | |