



PHD COURSE/MASTERCLASS IN DAIRY PROTEIN BIOCHEMISTRY AND PROTEOMICS

ECTS CREDITS: 2 ECTS

COURSE PARAMETERS:

Language: English

Level of course: PhD course

Time of year: 10-11 June 2024

No. of contact hours/hours in total incl. preparation, assignment(s) or the like: 18/58
Capacity limits: 30

Course fee: VLAG and PhD students at Danish universities 1000 DKK, other PhD students and post docs 1500 DKK, professionals and non-academics 2500 DKK

OBJECTIVES OF THE COURSE:

The course is intended as a combined PhD course and Masterclass. Dairy proteins are an important component of dairy products, but also one of the most widely used proteins in the food industry. Within this masterclass, you will learn about the specific features of the two main classes of dairy proteins, whey proteins and caseins. You will gain insight into the different analytical methodologies that exist to characterize dairy proteins, their variations and molecular features, like modifications. Finally, you will gain quantitative insight into the nutritional quality of dairy proteins in the human diet. Research communication aspects in the context of your project and the discussion of application of analytical methods included at the course.

LEARNING OUTCOMES AND COMPETENCES:

At the end of the course, the student should be able to:

- Use original scientific literature in the design and planning of experiments related to milk protein biochemistry
- Critically assess obtained results regarding milk protein biochemical features using protein

chemistry techniques

- Account for relations between structural features in milk proteins and their technological and nutritious properties
- Being able to assess choice of methodologies for assessment of milk protein biochemistry
- Understand the concepts of proteomics, peptidomics and methodologies behind, including examples of relevant bioinformatics tools to support these
- Communicate own research

COMPULSORY PROGRAMME:

Prepare for the course by reading the literature handed out prior to the course

Prepare a one-slide presentation of yourself and send in prior to the course

Prepare a poster of your project or work and send in prior to the course

Present your poster at the course and discuss your project or work in the context of the course content, with special emphasis on potential application of methodologies covered by the course
Participate in the 2 d program (own presentations +lectures + group work).

COURSE CONTENTS:

Presentation of yourself, presentation and discussion of your PhD project/own work. Lectures. Presentations and group work/discussions on theoretical assignments (incl. e.g. discussion of different models of casein micelles, interpretation of analytical data and outputs, discussions of original research papers relating to methodologies and milk protein biochemistry, questions related to impact of processing on milk protein biochemistry, use of bioinformatics).

PREREQUISITES:

PhD student (or ask course responsible if questions) or professional (with at least MSc) in industry (Masterclass) working within the area.

The course is aimed at research professionals (PhD level), who already have basic knowledge about protein (bio)chemistry and want to increase their specific knowledge about dairy proteins from a physico-chemical, analytical, and nutritional perspective. Participants should have a background in food/nutritional science, biology, chemistry or other life sciences.

NAME OF LECTURERS:

Professor Lotte Bach Larsen
Department of Food Science, AU

Associate professor Nina Aagaard Poulsen
Department of Food Science, AU

Associate professor Kasper Hettinga
Food Quality and Design, WUR

Assistant professor Etske Bijl
Food Quality and Design, WUR

TYPE OF COURSE/TEACHING METHODS:

Own presentations, lectures, group work

LITERATURE:

Original scientific literature, reviews and book chapters will be handed out to the students in advance of the course.

COURSE HOMEPAGE:

To be established
Brightspace will be established for course participants.

COURSE ASSESSMENT:

Participation in the program and in the group work. A course certificate will be provided based on the participation.

PROVIDER:

Department of Food Science, AU

SPECIAL COMMENTS ON THIS COURSE:

The PhD course/Masterclass is a joint course between AU and WUR. The aim is to hold it every 1-2 years, alternating between WUR and AU. The course was held for the first time at WUR in the summer of 2018.

TIME:

10-11 June 2024

PLACE:

Aarhus, Denmark

COURSE FEE:

VLAG and PhD students at Danish universities 1000 DKK, other PhD students and post docs 1500 DKK, professionals and non-academics 2500 DKK

REGISTRATION:

Deadline for registration is May 10th 2024. Information regarding admission will be sent out no later than May 24th 2024.

FOR REGISTRATION:

<https://events.au.dk/dairyproteinphd>
Please register as early as possible

If you have any questions, please contact
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