LUND UNIVERSITY

LTH
FACULTY OF ENGINEERING

Programme Syllabus

Master's Programme in Food Systems

- Programme code: TALSA
- Scope: 120 credits
- Cycle: Second
- Approved by: Carl Grey
- Validity: 2024/2025
- Date of approval: 1 March 2024

1 Aim and outcomes

1.1 Aim

The aim of the MFS programme is to prepare students to drive a future transformation of the food system and increase the competitiveness of their future employing companies. The MFS programme promotes a deep knowledge of the food system as an integrated value chain by providing students with the opportunity to study consecutively at three academic institutions which provide distinctly different semester blocks, each one of them focusing on specific areas of the food system. This is coupled with a partner-mentored project/thesis work and non-academic activities offered by industrial partners. In addition, pan-European activities at industrial partner sites will ensure bonding of the international cohort, and facilitate the creation of an international alumni network, with alumni activities offered by EIT Food. The programme will create a class of students that covers the food system in its entirety, with graduates having a holistic systemstype knowledge along with skills sets, providing, at the same time, selective knowledge within the food system by being able to customize their particular master programme.

1.2 Outcomes for a Degree of Master of Science (120 credits)

(Higher Education Ordinance 1993:100)

Knowledge and understanding

For a Degree of Master of Science (120 credits) the student shall

- demonstrate knowledge and understanding in the main field of study, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master of Science (120 credits) the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work,
- demonstrate the ability in speech and writing both nationally and internationally to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or autonomous employment in some other qualified capacity.

Judgement and approach

For a Degree of Master of Science (120 credits) the student shall

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work,
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

1.3 Further studies

Students who have achieved a second cycle exam (Master of Science) will have general entry requirements for third cycle educations.

2 Programme structure

The programme includes 90 credits courses and a degree project (30 credits).

2.1 First semester - Lund University, Sweden

2.1.1 LTH

Mandatory courses (advanced level)

- KLGN70 Introduction to the Food Systems 7,5 credits
- KLGN65 Sustainable Food Processing and Packaging 7,5 credits

Elective mandatory courses (advanced level)

- KLGN20 Food Engineering 7,5 credits
- KLGN30 Food Chemistry and Nutrition 7,5 credits
- MTTN35 Packaging Logistics 7,5 credits
- MTTN40 Packaging Technology and Development 7,5 credits
- MTTN56 Packaging Material Sciences 7,5 credits

2.2 Second and third semester

2.2.1 Track 'Sustainable food processing, circular food systems & future foods'

Semester 2. University of Turin, Italy

Mandatory courses

- Sustainable Bioprocesses in the Food System 7,5 credits
- Circular Economy Management 7,5 credits
- Green Extraction Technologies and By-products Valorisation 7,5 credits
- Entrepreneurship and Innovation in the Food System 7,5 credits

Semester 3. Aarhus University, Denmark

Mandatory courses

- Project Work in Sensory Science 5 credits
- Innovative and Organic Production of Fruits and Vegetables 7,5 credits
- Future Animal-based Food 5 credits
- Food, Consumer and Innovation 5 credits
- Emerging Technologies Business Case Study 7,5 credits

2.2.2 Track 'Sustainable food processing, public health nutrition and the consumer & future foods'

Semester 2. University of Reading, United Kingdom

Mandatory courses

- Public Health Nutrition and Consumer Food Choice 10 credits
- Food Product re-formulation 10 credits
- Nutrition Communication and Professional Practice 2,5 credits
- Entrepreneurship and Innovation in the Food System 7,5 credits

Semester 3. Aarhus University, Denmark

Mandatory courses

- Project Work in Sensory Science 5 credits
- Innovative and Organic Production of Fruits and Vegetables 7,5 credits

- Future Animal-based Food 5 credits
- Food, Consumer and Innovation 5 credits
- Emerging Technologies Business Case Study 7,5 credits

2.2.3 Track 'Sustainable food processing, AgriFood science and food systems management'

Semester 2. University of Hohenheim, Germany

Mandatory courses

- AgFoodTech 7,5 credits
- Entrepreneurship and Innovation in the Food System 7,5 credits

Elective courses

- Post-Harvest Technology of Food and Bio-Based Products 7,5 credits
- Information Technologies and Expert Systems in Plant Protection 6 credits
- Advanced Flavor Chemistry 7.5 credits
- Precision Farming 6 credits
- Advanced Process Engineering Techniques for Cereal Processing 7.5 credits
- Dairy Science and Technology 7.5 credits
- Soft Matter Science II - Food Physics 7.5 credits
- Drying, Granulation and Instantisation 7.5 credits
- Food Process Design II - Process Integration and Scale up 7.5 credits
- Irrigation and Drainage Technology 7.5 credits
- Free Project Work (spring/summer) 7.5 credits
- Internship (Industrial placement 6 weeks) (spring/summer) 7.5 credits
- Portfolio-Modul (spring/summer) 1-7.5 credits
- Online Dairy Science and Technology 5 credits
- Introduction to Machine Learning in Python 7.5 credits

Semester 3. University of Warsaw, Poland

Mandatory courses

- Leadership in Food System 7,5 credits

- Marketing in Food System 7,5 credits
- Management in Food System 7,5 credits
- Emerging Technologies Business Case Study 7,5 credits

2.3 Fourth semester

The last semester consists of the degree project (30 credits) conducted in Lund, for the students who studied the first semester in Lund.

2.4 Incoming students semester 2 and 3

Students admitted to semester 1 at one of the partner universities are given the opportunity to follow fixed tracks and then study courses at LTH according to courses in the Curriculum.

2.4.1 Incoming students semester 2

Mandatory courses (advanced level)

- KLGN65 Sustainable Food Processing and Packaging 7,5 credits
- KLGN15 The Relationship between Food Industry, Society and Consumers 7,5 credits
- KLGN75 Entrepreneurship and Innovation in the Food System 7,5 credits

Elective mandatory courses

- KLGN25 Food Technology for Formulation 7,5 credits
- KMBF10 Quality and Product Safety 7,5 credits

Elective course

- EXTA85 Food, Tradition and Innovation 7,5 credits

2.4.2 Incoming students semester 3

Mandatory courses (advanced level)

- KLGN80 Emerging Technologies Business Case Study 7,5 credits
- KLGN65 Sustainable Food Processing and Packaging 7,5 credits

Elective mandatory courses (advanced level)

- KLGN20 Food Engineering 7,5 credits
- KLGN30 Food Chemistry and Nutrition 7,5 credits
- MTTN35 Packaging Logistics 7,5 credits
- MTTN40 Packaging Technology and Development 7,5 credits
- MTTN56 Packaging Material Sciences 7,5 credits

3 Specific admission requirements

Application to the programme is made by EIT portal with support from partner Universities. https://mfs-apply.eitfood.eu

To be eligible for the Master programme applicants are required to have a Bachelor of Science (B.Sc. or a nationally recognized degree equivalent to 180 ECTS) in these fields: Agricultural Sciences, Biotechnology, Food Science, Chemistry, Food Safety or Nutrition. English 6.

4 Degree

4.1 Degree requirements

For a Degree of Master of Science (120 credits) students must successfully complete courses comprising 120 credits, including a degree project worth 30 credits. 90 credits must be second cycle credits and 60 credits of those must be in the main field of study, including the degree project.

4.2 Degree and degree certificate

When students have completed the degree requirements, they are entitled to apply for a Degree of a Master of Science (120 credits). Main Field of Study: Food Systems.