# **Master in Food Systems**

Become a leader of change in food ecosystems

# Personal journey through three academic institutions





Co-funded by the European Union

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# Introduction

# Welcome to the Master in Food Systems!



**Dr Maarten van der Kamp** Director of Education EIT Food

In today's complex society there are many **environmental and social challenges** that need to be solved to create a more sustainable future. A major concern is how a growing population on a resource constrained planet relates to food. In response to this challenge, EIT Food is **a European Knowledge and Innovation Community** setup to transform our food ecosystems. By connecting consumers with businesses, start-ups, researchers and students from around Europe, EIT Food supports innovative and economically sustainable initiatives which improve our health, our access to quality food, and our environment.

**Driving positive impact requires top talent** that understands the way food is produced and consumed as a system with many interconnected parts; a system for requiring innovative solutions to overcome current and future challenges. **Understanding the food system** is essential to develop ideas and solutions. In order to achieve impact we also require individuals who can **transform these ideas into innovations** – individuals that make a difference.

This programme is designed to give you both that deep insight into the food system, and the innovation and entrepreneurship competences to bring novel products and services to market to achieve positive change. We will help you develop your knowledge and skills to be an entrepreneurial leader, and the network and resources to be an effective agent of change in the food system: you will become a member of the EIT FoodHive, our professional network, to **connect with other change makers** and to build value together.

The programme is unique because of the mobility that enables you to **learn at three of the leading universities in the domain of Food Systems in Europe**. Furthermore, the programme was co-created with a number of EIT Food's industrial partners, ensuring that the knowledge and skills are demanded in the sector. We are delighted that throughout the programme you will have opportunities to **engage with industry and with entrepreneurs** to understand innovation and entrepreneurship in context.

Most importantly, throughout the two year programme you will learn with **a mix of people with different backgrounds and skills**. I hope you will enjoy working with them and build long-lasting friendships that will stay with you wherever your career may take you!

With best wishes,

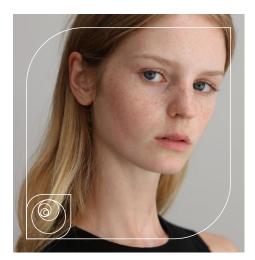
Maarten





I consider the network one of the biggest advantages of the programme and I plan to continue to make use of it after I graduate.

What the Master also made me realise, is that it's sometimes a huge advantage to have some knowledge in many fields, rather than being a specialist in only one area. It gives you the ability to look at things from a different, broader perspective and puts you in the position of the dot-connector.

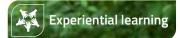


#### *Rieke Sproten MFS graduate*





## What



Learning-by-doing in order to master skills. You learn how to solve problems in context and how to drive impact on real world challenges.



Develop the ability to design and implement purposeful innovations and ventures across the food system.



Study consecutively at three distinct European academic institutions, each with their own culture and expertise. As a graduate you will become part of an international alumni network.



You're equipped with the skills and tools to collaborate effectively in virtual international teams.



Thought leadership

Become part of EIT Food's large professional network. You are taught by different experts and thought leaders in the fields of entrepreneurship, It gives you access to the right support in driving real innovation and food systems. change at any point in your career.





# About the Master in Food Systems Programme

### *Do you want to acquire in-depth knowledge about food systems and use your knowledge to drive the future transformation of the food system?*

The Master in Food Systems (MFS) programme is an **integrated graduate degree programme** organised by academic institutions and industrial partners from across EIT Food's pan-European partner network. Its goal is to prepare students to drive a future transformation of the food system and increase the competitiveness of your future employing companies.

### A new kind of **food entrepreneur**

The MFS is aimed at **students of any nationality who have previously obtained degrees** and have relevant knowledge to undertake the MFS. With **personalised study plans**, it al lows for a unique integration of different aspects of the food system, turning you into a new kind of food entrepreneur.

The programme allows the creation of a personal journey for each student through the selection of a subset of topics from the combined offering of the partner universities.







## Combined know-how of **three universities**

A unique aspect of this programme is that you not only get to know three cities and universities, but also three different academic perspectives on the food system. Each participating university provides a distinctly different track - a package of modules covering the specific area of expertise within that institution.

That way, graduates profit from the combined know-how of three European universities, ensuring in-depth academic competencies in relation to otherwise separate dimensions of the food sector, such as personalised nutrition, food safety, or sustainable food processing.





I chose this master because it is unconventional and dynamic, just like the food industry itself. Things are rapidly changing as consumer awareness is growing.

*Sai Chaitanya Adimulam MFS graduate* 

### Common modules for integrated knowledge

The specific modules are coupled with modules on innovation and entrepreneurship that are shared for all students. These overarching, obligatory modules are developed jointly between the universities.

They enable you to integrate the in-depth perspectives built up throughout your journey into an appraisal of the food system as a whole. As a result, you will gain a truly systemic comprehension of how food is produced, processed, marketed and consumed.





## Ready for **the future**

In addition, pan-European activities at industrial partner sites ensure bonding of your international cohort. They also facilitate the creation of an international alumni network, with alumni activities offered by EIT Food.

Through cooperation with and mentoring by industrial partners, the programme is designed to foster your entrepreneurial spirit and practical skills – resulting in a profile that will be highly sought after in the food sector.



# An international **adventure**

In the course of the two year programme, you will study at three different universities. With eight participating universities **all over Europe**, you will get a taste of different academic approaches and various cultures.

Each participating university offers distinct **mobility paths**, each of which starts and ends at the same university – we call it your **'home university'**. You will spend your second and third semester at **two other partner universities** which are specific to your chosen path.

You will specify your chosen path when enrolling on the programme. Please note that paths are confirmed at the selection stage depending on the preferences you will have indicated in your application and possible alternative paths.



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I really loved the international profile of the programme. Especially in connection with the entrepreneurial style of learning and the connection to people from all over the food system. I improved my skills in team work, and I discovered I am very good at mediating and communicating.

> UNIVERSITY OF WARSAW

*Laura Anne Scheuer MFS graduate* 

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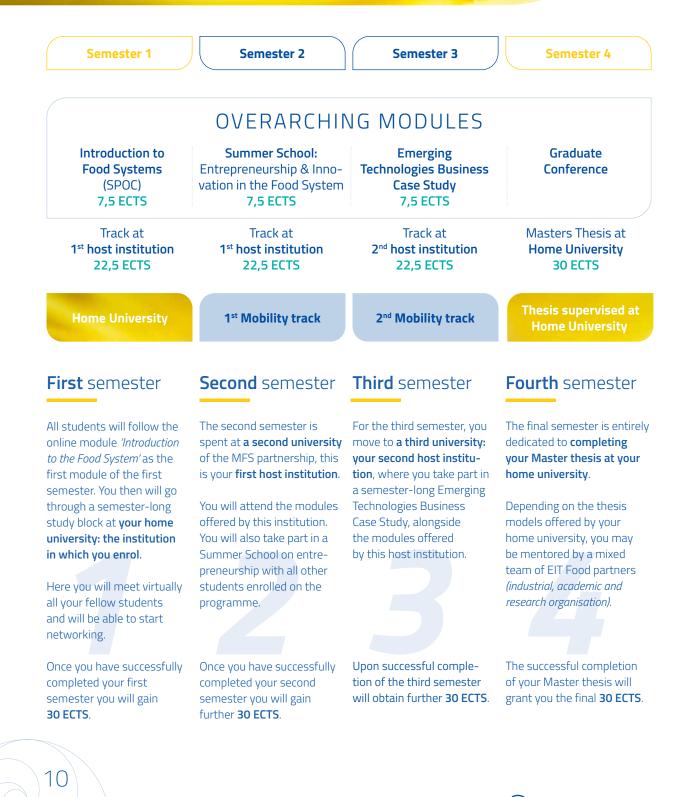
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Food

• UNIVERSITAT HOHENHEIM



# Structure of the programme







# 7 focus areas

The Master in Food Systems (MFS) is designed to create skills and knowledge crucial for tackling the **most urgent challenges facing the food sector today**. In the MFS partnership, we have identified a number of focus areas that specifically address each of these challenges. All study paths in the MFS programme combine expertise from three different partner universities - the *'home institution'* and two other universities where students spend their 2<sup>nd</sup> and 3<sup>rd</sup> semester. **Select the focus area that best matches your area of interest**, to find the study paths which offer the deepest focus on this area.



#### **1** Circular food systems

A shift from our current linear model *(make, use, dispose)* to a circular food system is required. This implies reuse of resources, reduction and *(re)*utilisation of side- and waste-streams to prevent food loss and waste, and to allow nutrient recycling and reduction in greenhouse gas emissions, as well as water and land use. This includes circular business models for sustainable Food Systems, and system thinking as a guide for the assessment of strengths and challenges of circular-ity processes.



#### Consumer practices and public engagement

The way consumers buy and consume food is of the uppermost importance in driving the transformation towards a sustainable Food System. A deep understanding of consumer behaviour is required for effective public engagement of consumers for a co-creational and awareness process.



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#### **3** Targeted nutrition and health management

Healthy nutrition is a key factor in reducing non-communicable diseases *(NCD)*, child and adult obesity. Providing the necessary nutrients depending on the citizen group and/or community is an important area of the Food Systems. Targeted and healthy nutrition should embrace sustainable production and circularity of food systems, to deliver an impact in the sector. It synergizes with a consumer-centric view of the food systems.





#### Sustainable production

We need to ensure sustainable food production across the entire food chain via the use of new 'green-methods', in order to make the best use of nature-based, technological, digital, and space-based solutions, to deliver better climate and environmental results, increase climate resilience and reduce and optimise the use of inputs (e.g. pesticides, fertilisers). In this respect agriculture 4.0 and rationalisation of resources contribute to sustainable food production.



#### 5 Food safety, transparency, traceability

Food safety is a cornerstone of quality, healthiness and excellence of food. However, consumers have a reduced trust in the food sector. This is complicated by a highly fragmented food sector, suffering from a lack of transparency. State-of-the-art analytical and biological methods, as well as systems for early detection of harmful substances in food, are essential for food safety. Digitalisation, analytics and biological data coupled with a data management processes will be instrumental for guaranteeing the safety of citizens and rekindling trust in the Food System.



#### 6 Management of food system innovations

Innovation management is key for those who want to invent and develop sustainable, innovative solutions for the food sector, and simultaneously have an impact on the commercialization process The goal is to develop and enhance an entrepreneurial and responsible mindset, as well as the skill to identify market needs and opportunities, and provide new and significant value for customers. The profile addresses the theory and practice of management for all levels of previous expertise, and specifically aims at translating managerial skills into food system innovations.



#### Innovative food processing

A critical part of the sustainable transformation of our food system is the processing of agricultural raw materials into foods. Innovative novel technology and holistic process designs are the basis of producing foods that are more environmental-friendly with fewer side streams. Innovative food processing elevates food processing beyond the state-of-the-art operations to create an overall higher food quality for an enhanced and more sustainable consumer experience.





# Paths & Tracks



Enrolment at University of Madrid, Spain (UAM)



#### **3 POSSIBLE PATHS**



Precision nutrition, sustainable processing & AgFoodTech



Z INNOVATIVE FOOD PROCESSING









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Precision nutrition, sustainable food processing & safety



**3** TARGETED NUTRITION AND HEALTH MANAGEMENT







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Precision nutrition, food business management & sustainable processing



**3** TARGETED NUTRITION AND HEALTH MANAGEMENT













#### INSTITUTION

Semester 1 (Fall/Winter)

#### UNIVERSIDAD AUTONOMA DE MADRID

OVERARCHING EVENT	SPOC INTRODUCTION TO THE FOOD SYSTEM	UAM
TRACK TITLE	Functional Foods and Precision Nutrition	
MODULES	<ul> <li>Functional foods: design and validation</li> <li>Omics Technologies</li> </ul>	
	<ul> <li>Personal Nutrition and Chronic diseases</li> </ul>	

INSTITUTION	LUND UNIVERSITY Sweden (LU)		UNIVERSITY OF WARSAW Poland (UW)		
OVERARCHING MODULE	SUMMER SCHOOL ENTREPRENEURSHIP AND INNOVATION IN THE FOOD SYSTEM				
TRACK TITLE	Consumer driven sustainable for	Consumer driven sustainable food processing			
OVERARCHING MODULE TRACK TITLE MODULES	This track aims to provide an understanding of the interdisciplinary connections and tools of sustainable food processing to enable smart-systems, including their need in society and their environmental, economic and social impact.		This track covers the most impor- tant areas related to organisation management and the value chain with modules on leadership, marketing and management in the Food System.		
-	•	↓	•		
INSTITUTION	<b>UNIVERSITY OF HOHENHEIM</b> Stuttgart, Germany (UH OH)	UNIVERSITY OF TURIN Italy (UNITO)	<b>LUND UNIVERSITY</b> Sweden (LU)		
OVERARCHING MODULE	EMERGI	ASE STUDY			
TRACK TITLE	AgriFood Science and Engineering	Food Safety of the whole value chain	Consumer driven sustainable food processing		
OVERARCHING MODULE TRACK TITLE MODULES	This track covers primary production, conversion and processing of value- added ingredients into innovative food products. You enrol in the obligatory module agFoodTech and select two elective modules from a pool of modules in food science and agricultural technology.	This track focuses on food safety of the whole chain from production to consumption, with insights of foodborne pathogens physiology and virulence, food toxicology, food safety management systems.	This track aims to provide an understanding of the interdisciplinary connections and tools of sustainable food processing to enable smart- systems, including their need in society and their environmental, economic and social impact.		
INSTITUTION	UNIVERSIDAD AUTONOMA DE MADRID Spain (UAM)				
EVENT					
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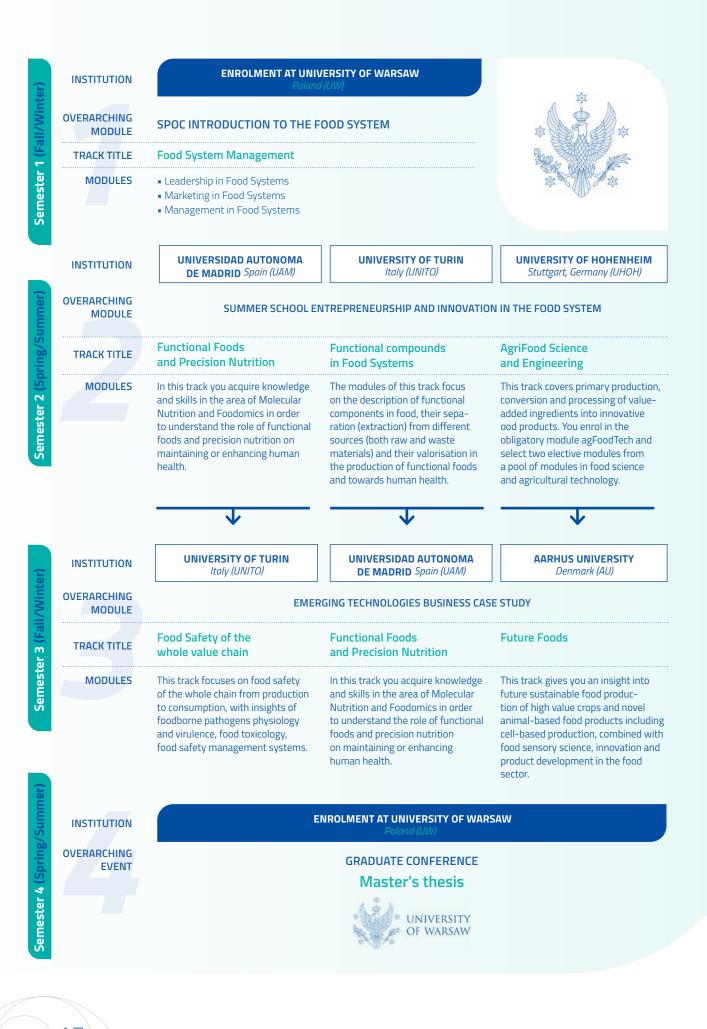
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#### Enrolment at University of Warsaw, Poland (UW)







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#### Enrolment at the University of Turin, Italy (UNITO)



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#### **3 POSSIBLE PATHS**



Food safety, sustainable processing & food business management



6 MANAGEMENT OF FOOD SYSTEM INNOVATIONS

5 FOOD SAFETY, TRANSPARENCY, TRACEABILITY







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Food safety, food business management & agFood tech



5 FOOD SAFETY, TRANSPARENCY, TRACEABILITY

4 SUSTAINABLE PRODUCTION













Food safety, precision nutrition & future foods



5 FOOD SAFETY, TRANSPARENCY, TRACEABILITY





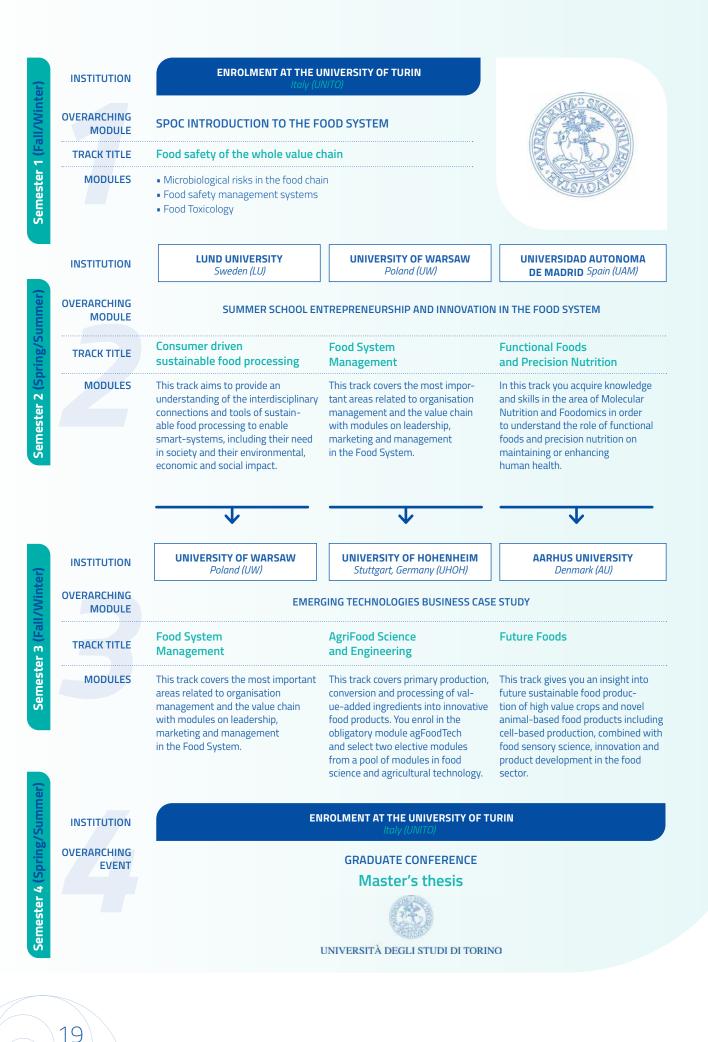




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Enrolment at the University of Reading, UK (UOR)



#### **3 POSSIBLE PATHS**



Personalized nutrition, food structure, quality & safety



5 FOOD SAFETY, TRANSPARENCY, TRACEABILITY







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Personalized nutrition, food structure,















Personalized nutrition, functional foods and sustainable processing



**3** TARGETED NUTRITION AND HEALTH MANAGEMENT



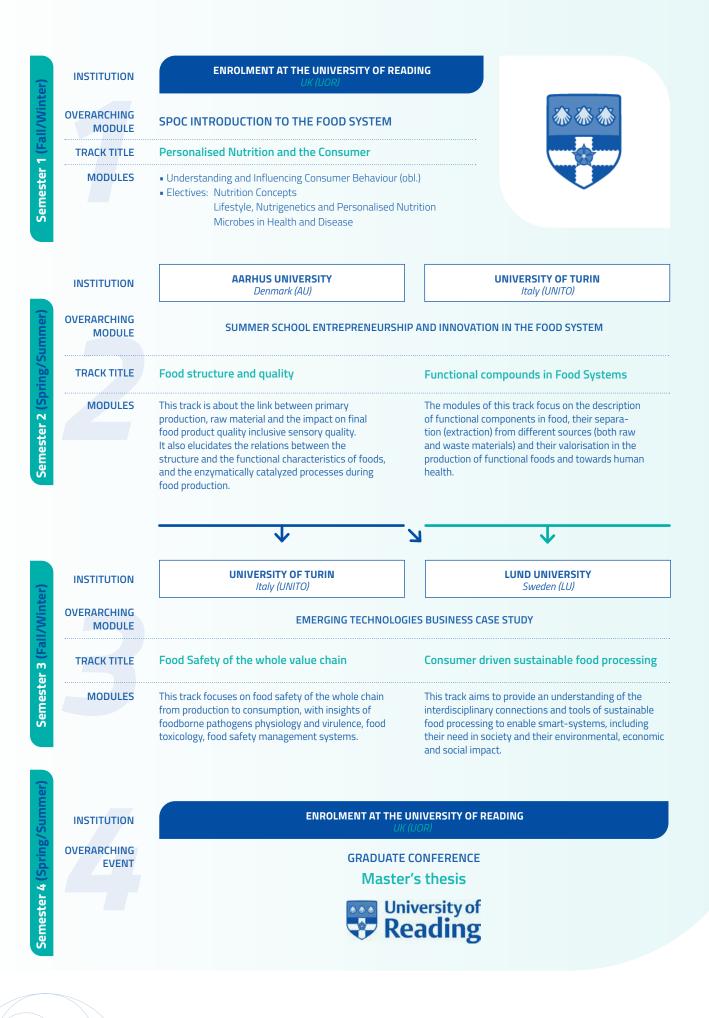




Reading



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#### Enrolment at the University of Hohenheim, Stuttgart, Germany (UHOH)



#### **3 POSSIBLE PATHS**



AgFood tech, functional compounds & personalized nutrition



INNOVATIVE FOOD PROCESSING



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AgFood tech, food business management & safety



5 FOOD SAFETY, TRANSPARENCY, TRACEABILITY

SUSTAINABLE PRODUCTION











AgFood tech, functional food design & future foods



INNOVATIVE FOOD PROCESSING

SUSTAINABLE PRODUCTION

**1** CIRCULAR FOOD SYSTEMS

> UNIVERSITAT HOHENHEIM

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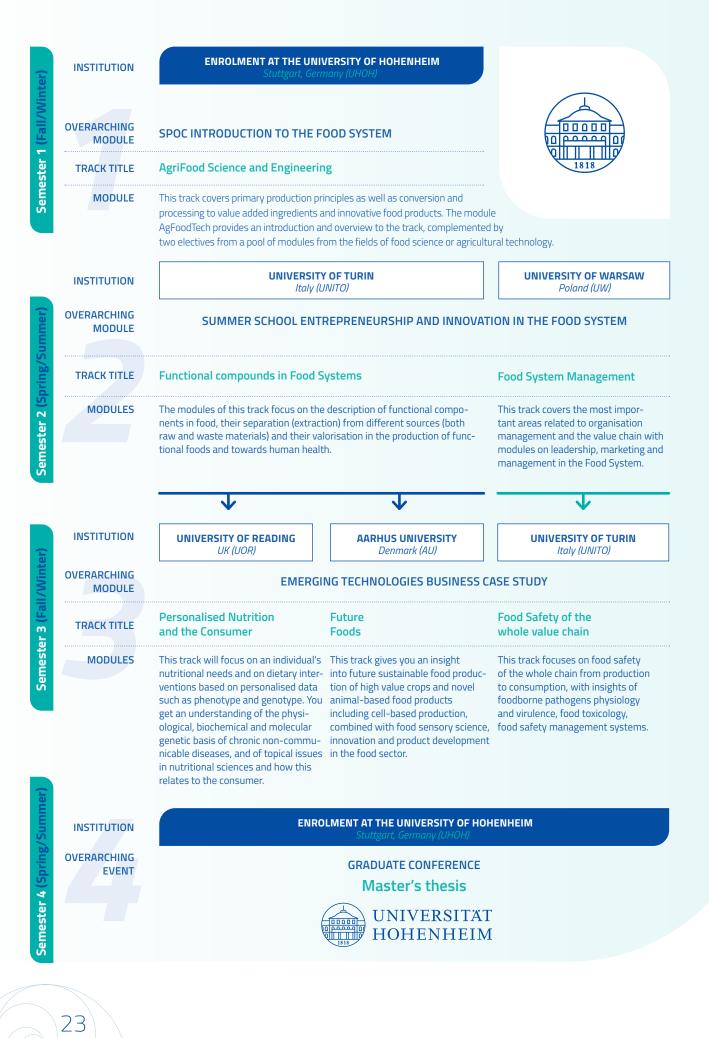












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#### Enrolment at the University of Lund, Sweden (LU)



#### **3 POSSIBLE PATHS**



Sustainable food processing, functional food design & future foods



SUSTAINABLE PRODUCTION



Sustainable food processing, structure, quality and management



SUSTAINABLE PRODUCTION



Sustainable food processing, consumer health & management



MANAGEMENT OF FOOD SYSTEM INNOVATIONS

2 **CONSUMER PRACTICES** AND PUBLIC ENGAGEMENT

LUND



UAM Universidad Autónoma de Madrid





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LUND

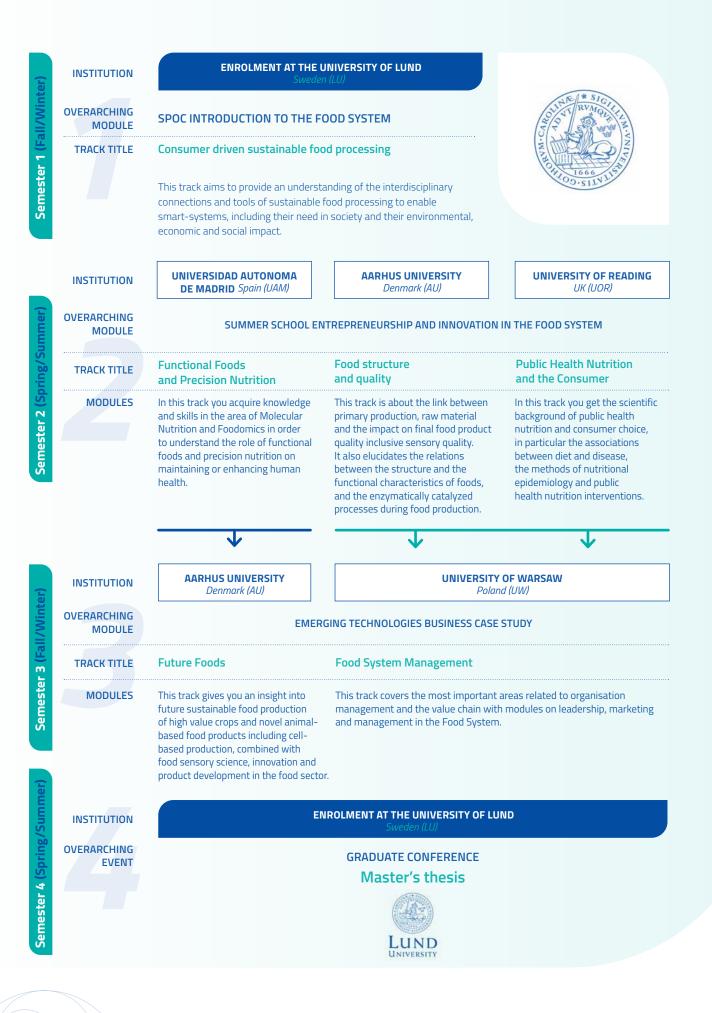




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# Who can apply?

#### Prior academic degree

A Bachelor of Science degree in Agricultural Sciences, Biological/Life Sciences, Food Science, Chemistry, Food Safety, Nutrition, and/or Economics and Management or any other BSc diploma (180 ECTS or equivalent), proving the knowledge in the fields listed.

#### English proficiency

Communicative competence in the English language, which is the medium of instruction for the entire programme, is a prerequisite.







#### Other criteria

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The selection process is implemented on the basis of jointly developed criteria and procedures by the MFS Joint Admissions Board, in which all partner universities are represented.

#### Important criteria for selection are:

 prior academic performance
 entrepreneurial potential – your potential to effect innovative change in society – e. g. through effective interpersonal skills, creativity, and the ability to leverage resources to achieve quality results.

Check the **specific requirements for each of the paths** you are applying for.



# How to ap

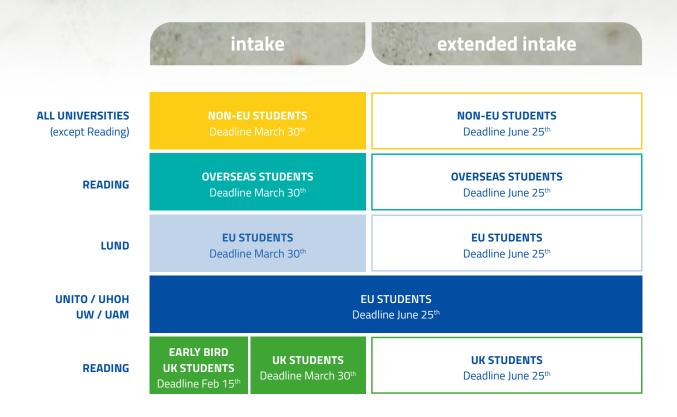


In the application phase, you can **select up to ten study paths** from the offering. These are treated as your preferred choices for enrolment in the Masters programme. If an application is successful, enrolment is offered in one of those paths. You will receive the best possible offer in relation to your preferences.

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# Timeframe



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# Subscription **fee**

#### **Participation** fees

ranging between €9,000 per academic year to €18,000 per academic year

#### **Deposit** fee

#### 50% of first semester fee

After being accepted by the programme, you will be offered to accept or decline the enrollment.

When you accept the offer, you will be required to pay a deposit fee. The deposit fee will be deducted from the invoice for your first semester fee. If payment is not received within 7 days after accepting the offer, it is possible you will no longer be accepted within the programme. The deposit fee is non-refundable.

In case you receive a **scholarship**, the deposit fee will be adjusted accordingly to 50% of your first semester fee, with a minimum of  $225 \in$ .



# Scholarships

EIT Food offers **various scholarships to top talents** based on a combination of academic skills *(such as past performance, quality of previous education and university)*, professional background and affinity with innovation and entrepreneurship.

A **participation fee waiver** means you don't have to pay the participation fee or tuition fee to follow the programme. You will still have to pay for your own accommodation and travel to the universities in your path, and have to cover all other costs linked to your personal life, like insurances, health care, etc.

**Partial participation fee waivers** means only a part of your participation fee is waived, and it will require a deposit fee. You may apply for a scholarship when you have been accepted for one of your preferred study paths.

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CHAIR STEERING COMMITTEE



Dr Maarten van der Kamp

Director of Education EIT Food EIT Food Belgium



Luca Cocolin

Professor University of Turin



Marta Bertolino

Associate Professor in Food Science and Technology University of Turin



Marina Reguero Simón

Education Project Manager Universidad Autónoma de Madrid



Maria-Luisa Duran

Coordinator MSc Food Systems Universität Hohenheim



Ulrik K. Sundekilde

Assistant professor Aarhus University



Claudia Lazarte, PhD

Lecturer at Food Technology, Engineering and Nutrition Department Lund University

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#### Emma Bennett

Lecturer in Food and Nutritional Sciences University of Reading



#### Katarzyna Kosowska

Student Affairs Coordinator University of Warsaw



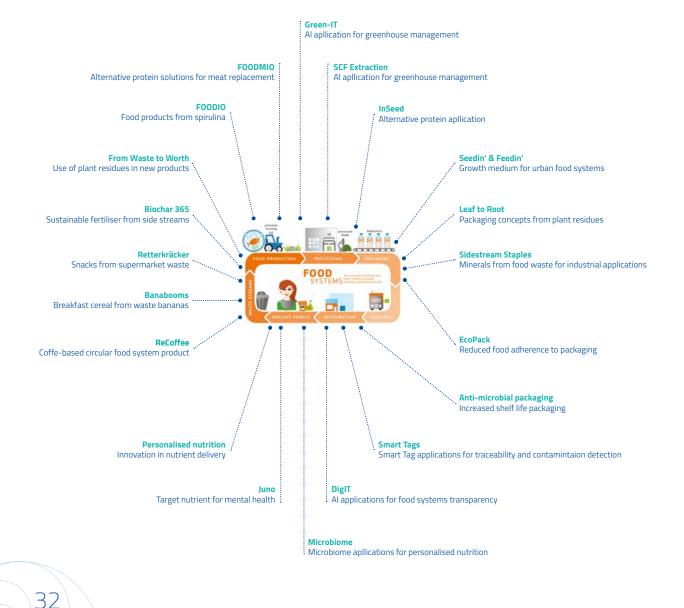
Lucia Debertol

Student Experience Advisor Dalm Management & Strategy Ltd OORDINATORS



# Previous Master's projects

#### Master's student **projects**



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# Alumni

After completing your MFS journey, you will be invited to join the Alumni Community. EIT Food's Alumni Community provides an exclusive space for the members to:

- connect and expand your network of fellow alumni start-ups & learners from the EIT Food programmes
- receive job and internship opportunities
- access agrifood talent pool

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- get invited to private workshops and meetings
- design **your own event** in international teams
- learn from **experts** and each other
- **lead discussion** on food sustainability, trust and more









## Covid **measures**

We ensure the continuity of our Master in Food Systems programme during the Covid-19 pandemic:





All universities are prepared to shift to **online forms of delivery and assessment** in response to pandemic-related restrictions. This can be different for different universities, so please check your preferred host university for the latest updates on teaching schedules.



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We are **monitoring the situation** weekly, making sure that everyone is safe and that learnings and pathways can continue with as little disruption as possible.

#### 3

The summer school is planned as a hybrid module with an online component and a final **face-to-face** meeting of the entire cohort; there will be real value in bringing everyone together and to experience the module jointly. However, we will also work on a fallback option that could be delivered online if restrictions prevent this.

4

We know that uncertainty can be quite a drain on the mental wellbeing, and therefore it is important to know that you are not alone: **you are part of a group** that is spread across Europe, and your fellow students and the teaching faculty and support staff at all the universities form a key support network.



# Programme leads



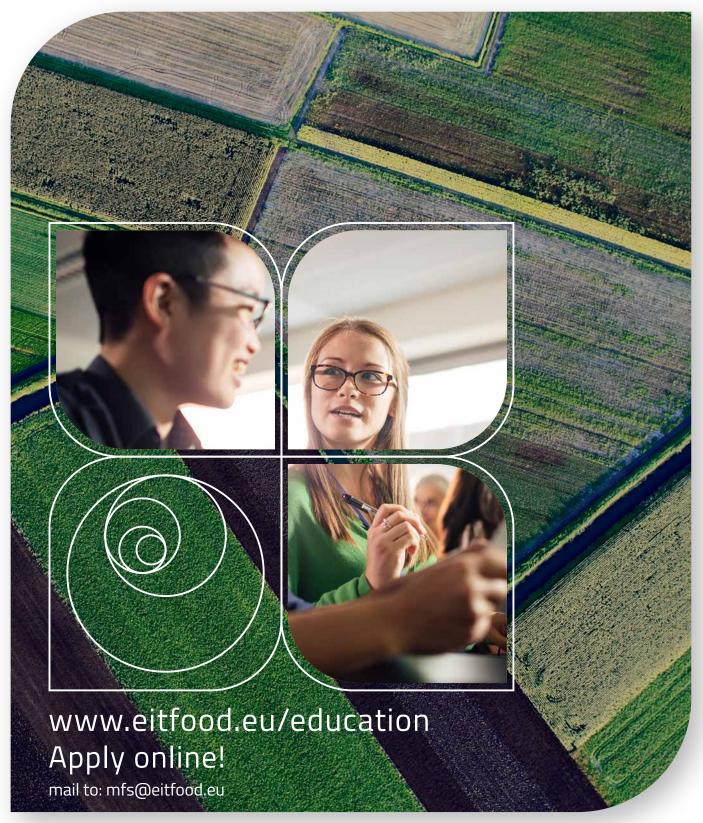
**Desi Vanrintel** Head of Education Services @EIT Food

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Andreas Glombitza-Cevey MFS Academic Manager @University of Hohenheim











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