UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26
MASTER DEGREE
NUTRITIONAL SCIENCES (Classe LM-70 R)
Enrolled in the 2025/26 academic year

HEADING

Degree classification - Denomination and code:	LM-70 R
Degree title:	Dottore Magistrale
Curricula currently available:	INNOVATION AND DEVELOPMENT OF THE FOOD SYSTEM / QUALITY AND MANAGEMENT OF THE FOOD SYSTEM
Length of course:	2 years
Credits required for admission:	180
Total number of credits required to complete programme:	120
Years of course currently available:	1st
Access procedures:	Open, subject to entry requirements
Course code:	GBB

PERSONS/ROLES

Head of Study Programme

Prof. Francesco Enzo Molinari

Tutors - Faculty

Tutor per i piani di studio:
lettera iniziale cognome studenti A-BE: Prof.ssa Stefania Iametti
lettera iniziale cognome studenti BI-CE: Prof.ssa Manuela Silvia Rollini
lettera iniziale cognome studenti CH-DI: Prof.ssa Cristina Alamprese
lettera iniziale cognome studenti DO-GI: Prof.ssa Silvia Grassi
lettera iniziale cognome studenti GL-LU: Prof.ssa Alyssa Mariel Hidalgo Vidal
lettera iniziale cognome studenti MA-MU: Prof.ssa Barbara Brunetti
lettera iniziale cognome studenti NA-PE: Prof.ssa Sara Limbo
lettera iniziale cognome studenti PH-RI: Prof. Alberto Giuseppe Barbiroli
lettera iniziale cognome studenti RO-TA: Prof.ssa Maria Stella Cosio
lettera iniziale cognome studenti TE-Z: Prof.ssa Stefania Arioli

Tutor per la mobilità internazionale e l'Erasmus:
Prof.ssa Alyssa Mariel Hidalgo Vidal

Degree Course website

https://scienzealimentari-lm.cdl.unimi.it/

Course management for the Faculty of Agricultural and Food Sciences (Science and Technology area)

via Celoria 2 - Milano Città Studi Phone 0250316511 Orario di apertura al pubblico: lunedì dalle 10 alle 12 e dalle 14 alle 16
Contatto: https://informastudenti.unimi.it/saw/ess?AUTH=SAML

Degree programme head

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Student registrar

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CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The Master's degree in Food Science and Technology (STAL), in line with the educational objectives set by the program, aims to train specialists in the field of food science and technology with in-depth interdisciplinary knowledge. Graduates will be able to perform complex tasks to effectively respond to the demographic, cultural, and technological changes that continually challenge the food production context. Educational priorities include areas such as food safety, quality, integrity,

and sustainability, in line with the bioeconomy principles established by the United Nations. These are integrated with the efficiency and productivity of the food sector, in line with the application of automation and digital technologies characteristic of Industry 4.0.
The program provides the theoretical, methodological, and practical foundations to prepare graduates, on the one hand, to support the resilience and optimization of traditional high-quality food production, and, on the other hand, to design and develop innovative food products. The education received will allow graduates to perform managerial tasks in the food industry and in companies related to the production, processing, preservation, and distribution of food products, packaging, and auxiliary products. This includes work in large-scale retail, public and private bodies conducting analysis, control, certification activities, as well as those involved in scientific investigations to protect and enhance food products, training institutions, and freelance work in the field of Food Technologists. The program also provides access to PhD programs in food science and technology, both nationally and internationally.
The program develops, in particular, solid knowledge and skills in the following areas and sectors:
? Food production, packaging, preservation, and distribution processes.
? Food safety, integrity, and quality.
? Integration of tradition and innovation in food production.
? Development of new food products considering consumer needs and preferences.
? Chemistry, biochemistry, and human nutrition with an applied focus on the food sector.
? Communication in interdisciplinary settings, including economic contexts.
? Management and use of microbial resources in various food and nutritional applications.

Ability to Apply Knowledge and Understanding
The core knowledge and understanding that the graduate in Food Science and Technology will acquire include:
? Chemical, physical, and structural properties of food.
? Theoretical and applied knowledge of European legislation on food hygiene and safety.
? Knowledge of voluntary standards in food quality and safety certification.
? Knowledge of new processing technologies that are alternatives to traditional ones, with a focus on innovative features and potential applications.
? Knowledge of methods for sizing and analyzing production plants.
? Knowledge of techniques and equipment for food and beverage packaging.
? In-depth knowledge of product and process design, optimization, and quality control strategies using digital innovation, industrial automation, and Quality by Design.
? Understanding of the relationship between structure and formulation/production of food products.
? Knowledge of statistical tools necessary for the design, optimization, and monitoring of products and processes.
? Understanding of national and international regulatory frameworks governing packaging machinery and equipment.
? Understanding the role of consumers in the design and optimization of food and processes.
? Knowledge of traditional and emerging sensory methods for evaluating acceptability and preference.
? Economic, political, and managerial knowledge of the food sector, from both a system-wide and company perspective, with a particular focus on innovation.
? Knowledge of the structural peculiarities of macromolecules and the properties of micromolecules in food matrices.
? Understanding the biochemical and chemical aspects of the main food transformation processes and the changes that occur in the final product, particularly concerning potential impacts on food quality in terms of nutritional and health-related aspects.
? Ability to understand the use of food to meet the nutritional needs of consumers.
? Understanding common nutritional issues related to food consumption.
? Knowledge of nutritional and biochemical aspects of food in the context of the daily diet, essential for defining new formulations that contribute to maintaining health, especially for sensitive consumers.
? Understanding regulations and directives related to the use of food in the nutritional sector.
? Knowledge of conventional and innovative technological and biotechnological processes.
? Knowledge of methods for evaluating and controlling food shelf life.
? Knowledge of analytical methods and techniques (chemical and physical) for evaluating the composition and structure of food.
? Knowledge of the complexity and diversity of microbial resources involved in ensuring food safety, quality, health, and sustainability in the agri-food system.
? Knowledge and understanding of methodological approaches necessary for studying microbiomes associated with food, food production environments, and the human microbiota.
? Knowledge and understanding of managing microbial resources to improve food processes and products, including enhancing biological value and extending shelf life through predictive microbiology approaches.
? Knowledge and understanding of recovering by-products for the enhancement of components with biological activity of interest in the food sector.

Expected learning outcomes
These results are primarily achieved and assessed through the completion of fundamental exams in the fields of food technology, food microbiology, food chemistry and biochemistry, nutrition, and economics.
The graduate in Food Science and Technology will be able to analyze and solve practical problems related to food quality concerning ingredients, additives, processing aids, packaging materials, and the technology applied across the entire food

supply chain, including economic sustainability, from the preservation and transformation of raw materials to the distribution of finished products. They will also be able to collaborate on food innovation and technology development projects in response to the challenges posed by sustainable development goals.
Graduates in Food Science and Technology will be able to apply the knowledge acquired to practical aspects of food science and technology, thanks to the interdisciplinary approach of the program. The ability to apply knowledge and understanding will be encouraged and assessed through laboratory activities and practical work during the preparation of the thesis. Students will also develop the ability to apply knowledge and understanding through internships/mentorships in collaboration with agri-food companies, institutions, and specialized public or private laboratories.

Judgment Autonomy
By the end of their studies, graduates will possess awareness and autonomy in judgment, enabling them to analyze various situations in a production and market context, plan actions, and manage interventions to improve the quality and efficiency of food and beverage production and all related activities, including environmental sustainability and eco-compatibility. This judgment autonomy and awareness of professional roles are primarily developed through classroom activities where professors encourage students to immerse themselves in possible professional situations and propose individual interpretations of both technical-scientific results and specific events related to the production and distribution of food products. This learning outcome is assessed by faculty members responsible for the educational activities, including through written reports assigned to students as outlined in the program?s regulations.
Two key moments for developing judgment autonomy are the internship/mentorship period and the thesis, where students will be encouraged to independently evaluate practical aspects and find appropriate solutions to encountered problems.

Communication Skills
By the end of the program, graduates will have developed personal communication skills, the ability to work in multidisciplinary teams, and judgment skills on both technical and economic levels, as well as on human and ethical levels. They will be able to use at least one language of the European Union, besides Italian (particularly English), with specific reference to discipline-specific terminology. These skills will allow them to responsibly carry out their professional activities in contexts where it is necessary to relate to different competencies and levels of expertise, including international environments.
These communication skills are developed by encouraging students to present their work both orally and in writing, including group activities. Participation in internships, workshops, seminars, and international activities provides further tools to enhance students' communication skills. The quality and effectiveness of communication are key elements in evaluating individual assignments, exams, and final evaluations.

Learning Skills
The program provides cognitive tools and logical elements that ensure graduates can continuously update their knowledge in the specific professional field of food and beverage production, preservation, distribution, and related scientific and technological research. Special attention is given to the use of new information technologies, both for communication and data processing and information research.
Both core and complementary courses, including institutional and supplementary seminars, provide ample opportunities for students to acquire methodologies and skills for personal development. The primary tool for assessing this learning outcome is the evaluation of the student by their thesis advisor. It is during the preparation of an original scientific project that students can best demonstrate their ability to access new opportunities for knowledge and personal development.

Professional profile and employment opportunities
Professional Profile: Food Technologist (a profession established by Italian Law No. 59, 1994, and subsequent implementing decrees, also referencing the Ministry of Health Circular dated December 6, 2000, regarding the mandatory registration in the professional registers of the relevant professional orders). The food technologist is capable of managing, organizing, and designing the production, preservation, and distribution of food while ensuring the sustainability and eco-compatibility of industrial activities. They play a key role in adopting and proposing innovations within the various professional activities of the sector.
The graduate of the Master's degree in Food Science and Technology carries out activities related to planning, management, control, coordination, and training concerning the production, preservation, distribution, and service of food. They are able to solve complex problems and independently plan and develop innovative solutions.
A primary objective of the training for the Master's graduate in Food Science and Technology is the management of professional functions aimed at the continuous improvement of food products, ensuring the sustainability and eco-compatibility of industrial activities, while adopting and proposing innovations related to the various professional tasks in the sector.
The broad range of advanced knowledge acquired defines a professional who can assume all necessary roles in the food industry and related production activities, such as:
? Coordinating and managing processes related to food transformation and commercialization, as well as selecting suppliers of raw materials, additives, processing aids, packaging materials, and equipment.
? Studying, designing, and optimizing food processing systems: from modeling to pilot trials to scaling-up, with a particular focus on environmental issues and economic sustainability.
? Integrated quality management across the entire production chain, aimed at achieving food safety, product quality, authenticity, social responsibility, and environmental protection.

? Developing innovative analytical protocols for safety control, identifying emerging risks, and assessing the quality and integrity of food production.
? Expert and arbitration functions related to the responsibilities listed above.
? Market research, consumer surveys, and benchmarking in relation to food production.

Skills Associated with the Role:
? Management and design of food production plants.
? Food design and optimization, formulation, and development of new food products (functional foods, novel foods).
? Integrated management of the food process.
? Expertise in food quality and safety: regulatory activities and management systems.
? Skills in emerging transformation technologies, preservation, conditioning, and methods for optimizing processes and products.
? Nutritional and biochemical expertise in the relationship between food and nutrition.
? Expertise in microbial resources for the food system.
? Knowledge in economics and innovation management within the food industry and marketing.
? Management of food quality assurance/certification systems, including aspects such as traceability and recall systems.

Career Opportunities
The professional activities of a graduate with a Master's degree in Food Science and Technology are primarily carried out in food industries and all companies involved in the production, transformation, packaging, and commercialization of food products. Other areas of employment include large-scale retail companies, public and private organizations conducting research, planning, analysis, control, certification, communication, and scientific investigations for the protection and enhancement of food products. Graduates can also work in training institutions and in freelance professions.

Initial knowledge required

To be admitted to the degree program, applicants must hold a degree from the L-26 class (or the corresponding class under Ministerial Decree 509/1999), or another foreign qualification recognized as equivalent, or a three-year university diploma. The university independently evaluates foreign academic qualifications in accordance with Articles 2 and 3 of Law 148/02 to issue the corresponding Italian degrees.
Graduates from other classes can also access the Master's degree program, provided they meet the following minimum requirements: at least 50 ECTS (CFU) in the following Scientific Disciplinary Sectors (SSD):

MAT/01-09
FIS/01-08
CHIM/01, CHIM/02, CHIM/03, CHIM/06, CHIM/10
AGR/01
AGR/15
AGR/16
BIO/10
BIO/09, MED/49

Admission Requirements
Among these, the candidate must have acquired at least:
• 9 CFU (ECTS) in SSD AGR/15
• 6 CFU in SSD AGR/16
• 6 CFU in SSD MED/49 or BIO/09
• 6 CFU in SSD AGR/01
If the candidate does not meet these specific curricular requirements, they may, upon recommendation from the Academic Board, attend individual courses offered by the University before undergoing the evaluation of their academic preparation.

Proficiency in English at a B1 level or higher under the Common European Framework of Reference for Languages (CEFR) is required for admission.
The B1-level requirement will be ascertained by the University Language Centre (SLAM) upon admission as follows:
- Language certificate at or above B1, obtained no more than three years earlier. For the list of language certificates recognized by the University please review: (https://www.unimi.it/en/node/39267). The certificate must be uploaded when submitting the online application;
- English level achieved during a University of Milan degree programme and certified by the University Language Centre (SLAM) no more than four years before the date of admission application, including levels based on language certificates submitted by the applicants during their Bachelor’s degree at the University of Milan. In this case the process is automatic, the applicant does not have to attach any certificates to the application;
- Entry test administrated by the University Language Centre (SLAM) according to the calendar published on the website: (https://www.unimi.it/en/node/39267)
All those who fail to submit a valid certificate or do not meet the required proficiency level will be instructed during the admission procedure to take the Entry test.
Applicants who do not take or pass the Entry test will be required to obtain a language proficiency certificate recognized by

the University (see: https://www.unimi.it/en/node/39322) and deliver it to the SLAM via the InformaStudenti service by the deadline fixed for the master's programme (https://www.unimi.it/en/node/39267/).
Applicants who do not meet the requirement by said deadline will not be admitted to the master's degree programme and may not sit any further tests.

Verification of Academic Preparation
Graduates from the Bachelor's Degree in Food Science and Technology (L-26 class) with a final grade of 80/110 or higher (or a weighted average of 21/30 in case the candidate has not graduated) are admitted directly to the Master's program.
For graduates in L-26 with grades below 80/110 or from other degree classes, the adequacy of their academic preparation will be assessed through an exam or interview (including online formats) conducted by a commission appointed by the Academic Board.
Core Knowledge for Adequacy Assessment
• General and Food Microbiology: Basic knowledge of the role of microorganisms in food processing and preservation.
• Food Technologies: Knowledge of fundamental unit operations and processes for the preservation and transformation of raw materials of plant and animal origin.
• Food Processing Equipment: Basic knowledge of machinery for food transformation and preservation.
• Economics and Marketing Principles.
• Food Chemistry and Analysis: Basic understanding of food composition, analytical techniques, and consumer protection considerations.
• Nutrition and Human Nutrition Fundamentals.
If the candidate lacks the specific curricular requirements, they may attend individual courses offered by the University upon the Academic Board's recommendation. Once the required preparation is achieved, the candidate can proceed to the adequacy verification exam.
For organizational details regarding enrollment, visit Unimi Enrollment Information.

Compulsory attendance
Attendance is strongly recommended for all training activities.

Notes
Knowledge of the English language
To be able to take the second year exams, students must be proficient in English at a B2 level, certified as follows:
- By summitting a B2 or higher language certificate issued no more than three years prior to the date of application. You will find the list of language certificates recognized by the University at: (https://www.unimi.it/en/node/39322). If not submitted during the application process, the certificate must be uploaded when enrolling, or subsequently at: http://studente.unimi.it/uploadCertificazioniLingue;
- B2 or higher level achieved earlier and validated during the application process;
- B2 or higher level achieved during the Entry test;
- By taking a Placement test administrated by the University Language Centre (SLAM) between October and January of year 1.
All those who do not achieve B2 or higher level will be required to attend a B2-level English course administrated by the University Language Centre (SLAM) during the second semester of year 1.
Those who do not attend the course or do not pass the end-of-course test after six attempts must obtain the necessary certification privately before graduating.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.
The agreements entered into by the University with over 300 universities from the 27 EU member countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organisations.
Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.
The University of Milan is a member of the 4EU+ European University Alliance that brings together eight public multidisciplinary universities: University of Milan, Charles University of Prague, Heidelberg University, Paris-Panthéon-Assas University, Sorbonne University of Paris, University of Copenhagen, University of Geneva, and University of Warsaw. The 4EU+ Alliance offers integrated educational pathways and programmes to promote the international mobility of students (physical, blended and virtual).

Study and internships abroad
The eligibility criteria to study under the Erasmus+ program, the rules for participation and the criteria for students selection are described in a specific call dedicated to the Food Area. Erasmus+ provides mobility opportunities within 40 academic partners, widely distributed in Europe and selected on the basis of their excellence and teaching affinity with the Italian degree. Students can apply to take courses in the following thematic areas: microbial biotechnology, applied nutrition, design and management of food plants, economy and innovation management, logistics and packaging technologies, modeling and process innovation. The outline of the Erasmus+ study program (learning agreement) is prepared by the

student in collaboration with the Italian academic Erasmus+ tutor. This document is defined after consulting the teaching board of the Italian degree and receiving the official approval of the activities to be performed in the host institution. In case of research activities, a detailed program describing the activities and the duration of the internship must be planned and formally approved by the host institution supervisor and by a member of the Italian teaching board (Italian supervisor). At the end of study period abroad the Erasmus+ activities (credits and grades) must be certified in a document called transcripts of records that must be approved by the Italian teaching board. Exam grades are converted according to a pre-defined scale. The MSc degree in Food Science and Technology is part of the international program Erasmus+ Placement which is finalized to fund mobility of students, to carry out research activities aimed at the preparation of their final thesis in highly qualified host institutions (private and public universities and research centers).

How to participate in Erasmus mobility programs

How to participate in Erasmus+ mobility programmes

The students of the University of Milan can participate in mobility programmes, through a public selection procedure.
Ad hoc commissions will evaluate:

- Academic career
- the candidate's proposed study programme abroad
- his/her foreign language proficiency
- the reasons behind his/her application

Call for applications and informative meetings

The public selection for Erasmus+ mobility for study generally begins around February each year with the publication of a call for applications specifying destinations and requirements. Regarding the Erasmus+ Mobility for Traineeship, the University of Milan usually publishes two calls a year enabling students to choose a destination defined by an inter-institutional agreement or to find a traineeship position on their own.

The University organises informative meetings to illustrate mobility opportunities and rules for participation.

Erasmus+ scholarship

The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which may be supplemented by the University funding for disadvantaged students.

Language courses

Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University Language Centre (SLAM).
https://www.unimi.it/en/node/8/

Learn more at https://www.unimi.it/en/node/274/

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
Contacts: InformaStudenti;
Student Desk booking through InformaStudenti

1st COURSE YEAR Core/compulsory courses/activities common to all curricula

Learning activity	Ects	Sector
	8	(2) BIO/10, (6) MED/49
	7	AGR/01
	8	(4) BIO/10, (2) CHIM/10, (2) CHIM/02
	7	AGR/15
	9	(3) AGR/09, (6) AGR/15
	8	AGR/16
	10	AGR/15
English proficiency B2 (3 ECTS)	3	ND
Total compulsory credits	60	

Further elective courses common to all curricula

The student may choose elective activities corresponding to 8 ECTS. The student may choose elective courses (minimum 4 ECTS- maximum 8 ECTS) or other activities (seminars, conferences, courses, or other activities organized by the University

or by another institution) up to a maximum of 4 ECTS. Elective activities can be undertaken always and exclusively after the favorable opinion of the Academic Board. The instructions for choosing these activities can be found in the paragraph "Course structure - presentation of the study plan".
The table below lists the elective activities proposed by the Academic Board of Food Science and Technology.

		4	MED/49
Active in 2026/2027 a.y.		4	AGR/15
		4	AGR/01
Active in 2026/2027 a.y.		4	AGR/15
		4	AGR/15
Active in 2026/2027 a.y.		4	AGR/15
		4	AGR/16

End of course requirements common to all curricula

		22	NA
		6	NA
	Total compulsory credits	28	

ACTIVE CURRICULA LIST

INNOVATION AND DEVELOPMENT OF THE FOOD SYSTEM Course years currently available: 1st
QUALITY AND MANAGEMENT OF THE FOOD SYSTEM Course years currently available: 1st

CURRICULUM: [GBB-A] INNOVATION AND DEVELOPMENT OF THE FOOD SYSTEM

2nd COURSE YEAR (available as of academic year 2026/27) Elective courses Curriculum-specific elective courses for INNOVATION AND DEVELOPMENT OF THE FOOD SYSTEM

	6	AGR/15
	6	AGR/16
	6	AGR/15
	6	AGR/15
	6	(2) BIO/10, (1) AGR/16, (1) AGR/11, (2) AGR/15
	6	(3) AGR/15, (3) CHIM/06
	6	(3) BIO/10, (3) CHIM/11
	6	(1) CHIM/11, (1) CHIM/10, (4) AGR/15

CURRICULUM: [GBB-B] QUALITY AND MANAGEMENT OF THE FOOD SYSTEM

2nd COURSE YEAR (available as of academic year 2026/27) Elective courses Curriculum-specific elective courses for QUALITY AND MANAGEMENT OF THE FOOD SYSTEM

	6	AGR/09
	6	AGR/01
	6	AGR/15
	6	BIO/10
	6	(3) AGR/11, (3) AGR/12
	6	(1) CHIM/01, (4) AGR/15, (1) CHIM/06
	6	(1) CHIM/11, (2) AGR/15, (1) CHIM/06, (2) AGR/13
	6	(2) AGR/16, (4) AGR/15