



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2020/21**  
**BACHELOR**  
**Food science and technology (Classe L-26)**  
**Enrolled from 2018/19 academic year**

### HEADING

<b>Degree classification - Denomination and code:</b>	L-26 Food industry
<b>Degree title:</b>	Dottore
<b>Length of course:</b>	3 years
<b>Total number of credits required to complete programme:</b>	180
<b>Years of course currently available:</b>	1st , 2nd , 3rd
<b>Access procedures:</b>	Cap on student, student selection based on entrance test
<b>Course code:</b>	G29

### PERSONS/ROLES

#### Head of Study Programme

Prof. Francesco Enzo Molinari

#### Tutors - Faculty

Tutor per i piani di studio:

A-BE Stefania Iametti

BI-CE Manuela Silvia Rollini

CH-DI Cristina Alamprese

DO-GI Luisa Maria Pellegrino

GL-LU Alyssa Mariel Hidalgo Vidal

MA-MU Barbara Brunetti

NA-PE Sara Limbo

PH-RI Stefano Farris

RO-TA Maria Stella Cosio

TE-Z Stefania Arioli

Tutor per la mobilità internazionale e l'Erasmus:

Alyssa Mariel Hidalgo Vidal

#### Degree Course website

<https://scienzealimentari.cdl.unimi.it/>

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L'abbinamento tra l'iniziale del cognome degli studenti e il docente tutor è consultabile nel Manifesto degli studi:

[https://apps.unimi.it/files/manifesti/ita\\_manifesto\\_G29of2\\_2021.pdf](https://apps.unimi.it/files/manifesti/ita_manifesto_G29of2_2021.pdf)

### CHARACTERISTICS OF DEGREE PROGRAMME

#### General and specific learning objectives

The degree course in Food Science and Technology aims to provide knowledge and train professional skills that allow the graduate to operate autonomously and to quickly enter the sector of production and distribution of food and drinks, and the sectors related to them, from the production to consumption. The general objective of the professional functions of the graduate in Food Science and Technology is the constant improvement of food products, look for quality and sustainability, eco-compatibility of industrial activities, developing innovations in each activity.

#### Expected learning outcomes

The tasks of the Food Technologist have long been defined at the level of international organizations (FAO, UN, EU) in consideration of the growing importance attributed to the control of the quality and safety of food, to a more rational exploitation of natural resources, the protection of the environment and the prevention of adulterations and food poisoning. The training allows the students to acquire: adequate basic knowledge of mathematics, physics, chemistry, biology, nutrition, economics and information technology; knowledge of the investigation methods specific to food science and technology, aimed at understanding the relationships between biological, crop and livestock issues and the quality of processed products;

logical and cognitive tools to understand the main operations and transformation processes of the food industry, and of the association between "production process" and "product quality" ; together with awareness of the complementarity of the notions acquired in different disciplinary areas. At the end of the studies, the graduate has a preparation and independent judgment that allow him to acquire the information necessary to implement interventions aimed at improving the quality and efficiency of food production and any other activity related to the food chain, also in terms of sustainable development. The graduate is able to communicate effectively also using, in the specific disciplinary context, the English language.

### **Professional profile and employment opportunities**

The professional profile of the Food Science and Technology graduate are characterized by an integrated knowledge of chemistry, biology and technology. The wide spectrum of basic knowledges and professional skills characterizes an expert who can cover many different functions in the food industry and in each production activities related to the food sector. The graduate in Food Science and Technology performs technical management and control tasks in the production, storage, distribution of food and drinks. The professional activity of the graduate takes place mainly in the food industries, in all the companies that operate for the production, transformation, conservation and distribution of food products, in public and private institutions and stakeholders that carry out analysis, control, certification and investigation activities for the protection and the enhancement of food production. The graduate is an expert able to operate in companies connected with the production of food, which supply materials, systems, adjuvants and ingredients. The most relevant professional outlets are those indicated technical professions in the management of the production processes of goods and services (ISTAT code 3.1.5.4.1 - Food preparation technicians; 3.1.5.4.2 - Food production technicians) and in life sciences (ISTAT code 3.2.2.3.1 - Biochemical laboratory technicians; 3.2.2.3.2- Food technicians). The graduate is expected to work in the sectors of production, public administration and research institutions. The graduate's responsibilities include: a) the management of food production, processing and marketing lines; b) the study, design, management, surveillance, management and testing of food processing processes and related biological products, including the processes of purification of effluents and recovery of by-products; c) the distribution and supply operations of raw materials and finished products, food additives, food plants; d) analysis of food products, quality control of food raw materials, finished products, additives, technological aids, semi-finished products, packaging and everything else relating to the production, conservation and transformation of products, the definition of standards and specifications for aforementioned products; f) market research and related activities in relation to food production; g) research and development of processes and products in the food sector.

### **Notes**

#### **Computer skills**

Students who are supposed to earn 3 credits (CFU) for basic computer skills, as provided by their degree programme, have to attend the "Computer Science Course 3CFU".

It is a blended course with a compulsory final exam.

Students who have already fulfilled an ICT Assessment during their previous studies should submit the related certification to their degree Secretariat, seeking its acknowledgement: it will be evaluated and they will receive a positive or negative feedback.

The "Computer Science Course 3CFU" course is managed by the CTU - Teaching and Learning Innovation and Multimedia Technology Centre.

To obtain the degree, students are required to demonstrate an English language proficiency at level B1 within the Common European Framework of Reference for Languages (CEFR). This level can be assessed in the following ways:

- by submitting the language certificate achieved no more than three years prior to the submission, at level B1 or higher, recognised by the University (the list of recognised language certificates can be found at: <https://www.unimi.it/en/study/language-proficiency/placement-tests-entry-tests-and-english-courses>). The language certificate must be uploaded during the admission process;

- by taking the Placement Test, organised by SLAM exclusively during the first year, from October to December. Students who fail to reach level B1 or B2 will have to attend an English course organised by SLAM. The Placement Test is compulsory for all students who do not have a valid language certificate.

Students who do not take the Placement Test within the deadline and students who fail the SLAM end-of-course test within six attempts will have to obtain a language certificate within the year in which the language exam is scheduled.

## **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 30 different 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 organizations.

Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

### 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: chemistry, biochemistry, food microbiology, food technology processes, human nutrition, quality management and food economics and marketing.

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).

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.

### 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, which last 3 to 12 months, through a public selection procedure.

Ad hoc commissions will evaluate:

- 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 generally begins around February each year with the publication of a call for applications specifying the destinations, with the respective programme duration, requirements and online application deadline.

Every year, before the deadline for the call, the University organizes informative meetings to illustrate opportunities and rules for participation to students.

Erasmus+ scholarship

The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which is 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.

Learn more at <https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus>.

For assistance, please contact:

International Mobility Office

Via Santa Sofia 9 (second floor)

Tel. 02 503 13501-12589-13495-13502

E-mail: [mobility.out@unimi.it](mailto:mobility.out@unimi.it)

Desk opening hours: Monday to Friday 9 am - 12 noon

<b>1st COURSE YEAR Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Calculus	8	MAT/05
Elements of chemistry and physical chemistry	8	CHIM/02
English assessment B1 (3 ECTS)	3	ND
Fundamentals of physics	6	FIS/07
Fundamentals of plant biology and yield	10	AGR/19, AGR/13
Organic chemistry	8	CHIM/06
Principle of Economics and Statistics	8	AGR/01
Total compulsory credits		51
<b>2nd COURSE YEAR Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Analytical chemistry with elements of chemometrics	7	CHIM/01

Biochemistry	10	BIO/10
Food chemistry and analysis	8	AGR/15
Human nutrition	6	BIO/09
Microbiology and food microbiology	12	AGR/16
Principles of Food Engineering	12	(6) AGR/15, (6) ING-IND/11
Total compulsory credits	55	

### ***3rd COURSE YEAR Core/compulsory courses/activities common***

Learning activity	Ects	Sector
Applied microbiology	6	AGR/16
Firm and chain management in the food sector	6	AGR/01
Food ingredients, additives and contaminants	6	AGR/15
Food processing with elements of packaging	12	AGR/15
Food protection	6	AGR/11, AGR/12
Food quality and traceability in the supply chains	6	AGR/15
Sensory analysis of food and data analysis	6	AGR/15
Total compulsory credits	48	

### ***COURSE YEAR UNDEFINED Core/compulsory courses/activities common***

Learning activity	Ects	Sector
Computer Science Course	3	INF/01
Stage	8	NA
Total compulsory credits	11	

### ***Further elective courses***

### ***End of course requirements***

Final exam	3	NA
Total compulsory credits	3	

## ***COURSE PROGRESSION REQUIREMENTS***

*The course contains the following obligatory or advised prerequisites*

Learning activity	Prescribed foundation courses	O/S
Food processing with elements of packaging	Principles of Food Engineering	Core/compulsory