



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2024/25**  
**MASTER DEGREE**  
**Human Nutrition and Food Science (Classe LM-61)**  
**Enrolled from 2017/18 academic year**

### **HEADING**

<b>Degree classification - Denomination and code:</b>	LM-61 Nutrition
<b>Degree title:</b>	Dottore Magistrale
<b>Length of course:</b>	2 years
<b>Credits required for admission:</b>	180
<b>Total number of credits required to complete programme:</b>	120
<b>Years of course currently available:</b>	1st , 2nd
<b>Access procedures:</b>	Cap on student, student selection based on entrance test
<b>Course code:</b>	K05

### **PERSONS/ROLES**

#### **Head of Study Programme**

Prof.ssa Patrizia Riso

#### **Tutors - Faculty**

Tutor per i piani di studio:

lettera iniziale cognome studenti A-G: Prof. Andrea Foppiani/Prof.ssa Alessandra Marti

lettera iniziale cognome studenti H-P: Prof.ssa Stefania Iametti/Prof.ssa Antonella Pagliarini

lettera iniziale cognome studenti Q-Z: Prof. Giorgio Gargari/Prof. Cristian Del Bo'

Tutor per la mobilità internazionale e l'Erasmus:

Prof.ssa Alessandra Marti

#### **Degree Course website**

<https://alimentazionenutrizione.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**

Phone 0250316726 Email: [presidenza-anu@unimi.it](mailto:presidenza-anu@unimi.it)

#### **Student registrar**

via Celoria 18 - Milano Città Studi Phone 0250325032 <https://www.unimi.it/it/node/360> <https://www.unimi.it/it/node/359>

### **CHARACTERISTICS OF DEGREE PROGRAMME**

#### **General and specific learning objectives**

The Master's degree programme in Human Nutrition and Food Science aims to provide advanced knowledge, and develop professional acumen in students so that they can help others develop a healthy approach to food, consistent with applicable regulations, thereby improving overall nutrition. The degree programme presents a holistic and systematic view of food quality, with a curriculum based on gaining an in-depth knowledge of food, consumers, and the nutritional challenges they face. The programme specifically aims to provide students with an understanding of the elements that make up food quality, and the ability to connect and consolidate these elements into a set of nutritional requirements appropriate for the general population, as well as targeted to specific population groups, and tailored to the needs of the individual, whilst respecting the demands and restrictions of the supply chain.

#### **Expected learning outcomes**

Graduates of Human Nutrition and Food Science must gain a knowledge base in, as well as the ability to understand and interpret, the following:

- the properties of food and its components, modifications to food according to technological processes, and the study of factors that govern bioavailability;

- technological processes for food preparation, and the processing of dietary supplements and foods intended for specific groups of consumers;
- food-safety and food-quality issues relating to biological, chemical, and physical contamination of food;
- principles of biochemistry, physiology, and human pathophysiology as they pertain to nutrition, with a special focus on malnutrition caused by over/under-eating;
- the influence of foods and the human microbiome on supporting good health and preventing disease;
- methods for assessing energy expenditures, nutritional values, and functional parameters;
- community nutrition;
- food-product market dynamics, and their effects on consumption and consumer behaviour;
- food regulations and nutrition policy, nutrition education and public health;
- foundations in statistics, biometrics, and epidemiology, and skills acquisition in:
- determining the nutritional quality of individual foods and innovative-product design;
- analysing, preventing, and managing nutritional risk;
- assessing the role of specific foods / components on health;
- evaluating indicators of nutritional health;
- adopting food-based strategies to promote health, and to prevent the insurgence of diseases;
- methods for surveying food consumption, and strategies for conducting nutritional monitoring on a population-group level;
- applying management and control systems aimed at ensuring food-product and food-service safety and quality;
- assessing nutritional policies, and producing food-education and consumer-education programmes;
- employing the scientific method to investigate and apply acquired knowledge and acumen to solving problems in human nutrition in a variety of contexts.

Graduates of this programme will further gain:

- the ability to express opinions based on their understanding of human nutrition, conscious of the ethical and social implications of their conclusions, and the ability to interpret data collected through the practical application of their knowledge;
- communication and interpersonal skills, the ability to convey ideas, discuss problems and find solutions; the ability to generate and present data, as well as to transmit and disseminate information on issues of human food and nutrition;
- life-long learning skills: the ability to continue one's education using a variety of resources, from books to databases to other baseline informational resources.

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

Graduates of this programme will be ready for a professional career as a nutritionist in a variety of settings within the food system and industry (from formulating foods for distribution, to food service, to helping others make healthy food choices), and help support human health through an approach which is both distinct from, and yet coordinated with, the medical profession.

Those with a Master's degree in Human Nutrition and Food Science have opportunities for senior positions within the food or pharmaceutical industry in terms of developing and promoting food products that are crucial for good nutrition (functional foods, foods developed for special diets and for specific medical concerns), the safe management of food fit for human consumption, nutritional and sensory quality assessments, as well as managing food-related public relations. They may also be tasked, as permitted under EU regulations, with generating nutritional claims, and guiding research and documenting health claims for foods.

Within the food-service or food-supply arenas, whether in a private or institutional setting, these graduates can work in programming, management, control, coordination, and training, implementing integrated systems to provide quality control on the service as rendered. Positions in leadership, coordination, consultancy, and research are available within institutions that deal with the effects of nutrition on human health. Graduates will further gain the ability to assess which foods, and in what amounts, are needed to reach optimal nutritional values to maintain good health at a group and individual level, as well as to design and conduct food education, training, teaching, and to produce publications.

Under the Classification of Professions established by ISTAT (2001), the most relevant professional opportunities are those identified as specialised professions in the life and health sciences and education, research, and related fields.

For example, graduates would have the following skill sets:

- a) development, formulation, and promotion of high-nutritional-impact food products (functional foods, foods developed for special diets and for specific medical concerns);
- b) managing nutritional claims and other general aspects of food-related communications;
- c) research and documentation on health claims;
- d) assessing nutritional and sensory quality, and managing the safety and fitness of foods intended for consumption;
- e) proposing and auditing protocols for proper nutrition intended to maintain optimal health;
- f) establishing and managing food-education programmes aimed at the general population or specific groups;
- g) working with surveys of food consumption, and nutrition-monitoring programmes;
- h) conducting market research and other activities relating to the food supply chain;
- i) research and development in human nutrition;
- l) providing training on quality and safety issues to agriculture and food industry workers;
- m) teaching nutrition and food safety as part of a school's technical or scientific curriculum.

### **Initial knowledge required**

Admission requirements

Applicants to the programme must have adequate basic knowledge. More specifically, they must hold a university degree obtained by 31 December 2024, in classes L-26, L-2, L-13, L-29, in health professions classes L-SNT3 (Dietitian only) and L-SNT4 (Environment and workplace prevention technician only), or in classes 20, 1, 12 and 24, and health professions classes SNT/3 e SNT/4 under the previous regulations. In addition to a degree in the above listed classes, at least 50 credits will be required as additional curricular requirements in the following academic fields, covering biology, biochemistry, nutrition, hygiene, food technologies and microbiology: BIO/01, 03, 09, 10, 12, 13, 16, CHIM/06, CHIM/10, AGR/15, AGR/16, MED/07, MED/42, MED/49 and similar.

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. In this case the process is automatic, the applicant does not have to attach any certificates to the application;

- Placement 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 placement test.

Applicants who do not take or pass the placement 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.

#### Admission assessment

Admission into the degree programme is capped in order to meet high-quality teaching standards relative to the available resources.

There are 150 places available for enrolment in the first year, plus 10 places for non-EU students residing abroad.

Access to the programme is regulated by a compulsory test aimed at ascertaining the initial skills of the candidates, with a view to successfully completing their course of studies.

All applicants will be required to take the test, including transfer students from other universities, students who completed one or more courses of the Human nutrition and food science programme as single courses, and graduate students.

The Academic Board will decide into which year to admit the student, and may award any transfer credits for their previous career.

The test will assess knowledge and skills in the following areas:

- 1) biochemistry, biology and human physiology;
- 2) nutritional properties and fundamentals of nutrition and food science;
- 3) principles of food preservation and processing;
- 4) main microbiological aspects related to the quality and safety of food preparation, storage and distribution.

The test is selective in nature. Therefore, in order to be admitted into the Human nutrition and food science programme, candidates must:

- a) achieve a score higher than the threshold set by the Board;
- b) rank high enough in the merit ranking based on individual test scores;
- c) meet all admission requirements (degree, 50 credits earned in relevant academic fields, B1 level in English) by 31 December 2024.

For admission tests, there are two separate sessions:

FIRST SESSION - July 2024, for candidates who have already graduated and meet curricular requirements or expect to meet them by 30 July.

SECOND SESSION - September 2024, for upcoming graduates and candidates who do not yet meet curricular requirements. These must be met by 31 December 2024.

Graduates who have not taken or passed the admission test in July will be admitted to the September session.

For test details including dates, time, venue and delivery modes, please refer to the call for applications posted to the page <https://alimentazione.nutrizione.cdl.unimi.it/isciversi>

For non-EU, non-resident students with foreign qualifications, applications will be assessed based on the qualifications, and possibly an online interview. Further information will be included in the call for applications.

The Academic Board will appoint an admission board made up of at least three instructors from the degree programme, which will conduct the admission procedures.

In order to facilitate access to the degree programme and allow students to fill any learning gaps or hone knowledge and skills required for admission, applicants to the programme are offered a dedicated annual course: "Fundamentals of nutrition and food science" (12 credits).

It is underlined that this course does not fall within the scope of those with independent choice.

## **Compulsory attendance**

Course attendance is strongly recommended.

## **Degree programme final exams**

Upcoming graduates can work on their thesis on campus or off campus, in a public or private organization. The thesis is an original scientific paper on the topics of food and human nutrition, to be written under the guidance of a supervisor and a co-supervisor, who may be another faculty member or an external expert. The experimental activity is documented by means of a written paper structured as a scientific publication. The candidate will present and defend their thesis, highlighting the state of the art for that topic, as well as the purpose, approach, findings and conclusions of their work. The thesis can be written and discussed in Italian or English. The board will award thesis points based on the candidate's presentation and the supervisor's assessment.

## **Notes**

In order to obtain their degree, students must be proficient in English at a B2 level, certified as follows:

- by submitting a B2 or higher level 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 admission 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 exam 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 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 area of nutrition and to carry out experimental work for the thesis in the following thematic areas: applied nutrition, assessment of nutritional status, nutritional characterization of food products and study of their in vitro and in vivo effects, the role of diet on the microbiota, food production technologies and food microbiology as well as activities relating to food education. 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 of any grades relating to previously approved optional courses. The MSc degree in Human Nutrition and Food Science 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). Furthermore, the participation of male and female students in the thesis abroad call for proposals financed by the University is also supported, which allows them to carry out their degree thesis in qualified structures even outside the European Union.

## **How to participate in Erasmus mobility programs**

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 organizes 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; [mobility.out@unimi.it](mailto:mobility.out@unimi.it)

Student Desk booking through InformaStudenti

<b>1st COURSE YEAR Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Applied nutrition	6	MED/49
Biochemistry of food, nutrition, and metabolic diseases	9	BIO/10
Economics and psychology of food consumptions	11	(5) M-PSI/01, (6) AGR/01
English proficiency B2 (3 ECTS)	3	NN
Food preservation and processing	8	AGR/15
Human physiology	6	BIO/09
Microbial quality and safety in food and ecology of human microbiota	8	AGR/16
Structure and function of organic molecules in food	6	CHIM/08
Total compulsory credits		57
<b>2nd COURSE YEAR Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Evaluation of nutritional status and principles of dietetics and diet therapy	10	BIO/09
Nutrition for health promotion	6	MED/49
Nutritional Epidemiology and Biostatistics	6	MED/01
Nutrition-related diseases	11	(5) MED/13, (6) MED/04
Total compulsory credits		33
<b>Further elective courses</b>		
To earn the 8 credits for elective activities, students may choose any course offered by the University of Milan, provided that the Academic Board recognised such course as congruent with the study programme. The Academic Board recommends the elective courses listed in the table below. See also the paragraph Structure of the course - Presentation of the study plan. For certified professional knowledge and skills, as well as other knowledge and skills acquired in the course of post-secondary level training activities designed or implemented in collaboration with the University of Milan, students may be awarded a maximum of 12 credits.		
The teachings Feeding throughout pediatric age, Nutraceuticals and drugs in cardiovascular prevention and Probiotic science and applications must be followed in the second year of the course.		
Feeding throughout pediatric age	4	MED/38
Food choices and preferences of consumers (Consumer Science)	4	AGR/15
Molecular bases of taste	4	CHIM/06
Nutraceuticals and drugs in cardiovascular prevention	4	BIO/14
Probiotic science and applications	4	AGR/16
<b>End of course requirements</b>		
Final exam	22	NN
Total compulsory credits		22