



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2023/24**  
**BACHELOR**

**Development and protection of mountain environment (Classe L-25)**  
**Enrolled from 2019/20 academic year**

### **HEADING**

<b>Degree classification - Denomination and code:</b>	L-25 Agriculture and Forestry
<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>	Open, subject to completion of self-assessment test prior to enrolment
<b>Course code:</b>	G24

### **PERSONS/ROLES**

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

Prof.ssa Annamaria Giorgi

#### **Tutors - Faculty**

Tutor per i piani di studio:

lettera iniziale cognome studenti A-C: Prof.ssa Borgonovo Gigliola

lettera iniziale cognome studenti D-F: Prof. De Noni Ivano

lettera iniziale cognome studenti G-L: Prof. Facchinetti Davide

lettera iniziale cognome studenti M-O: Prof. Ferrazzi Giovanni

lettera iniziale cognome studenti P-S: Prof. Saracchi Marco

lettera iniziale cognome studenti T-Z: Prof. Tamburini Alberto

#### **Degree Course website**

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

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

via Celoria 2 - Milano Città Studi Phone 0250316511-0250316512 Lunedì, mercoledì e venerdì dalle 10.30 alle 12.30; martedì e giovedì dalle 14 alle 16. <https://informastudenti.unimi.it/saw/ess?AUTH=SAML>

#### **Degree programme administration**

Via Morino 8, Edolo (BS) Phone 0250330500 Email: [corso.edolo@unimi.it](mailto:corso.edolo@unimi.it)

#### **Degree programme head**

Email: [presidente.edolo@unimi.it](mailto:presidente.edolo@unimi.it)

#### **SLD tutor**

Prof.ssa Fulvia Tambone Email: [fulvia.tambone@unimi.it](mailto:fulvia.tambone@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 Degree Course in Development and Protection of the Mountain Environment, as specified by the ministerial decree for the class of Agricultural and Forestry Sciences and Technologies (class L-25), prepares graduates with good basic knowledge in the main sectors of agricultural and forestry sciences, with particular reference to mountain environments. They will be able to perform technical, managerial and professional tasks, finalizing their knowledge to solve applied problems in the agricultural, environmental and forestry sector, with particular reference to the specific conditions and needs of mountain areas, facilitating innovation processes and the promotion of sustainable development and new activities, also in the context of the "green economy". The orientation towards problem-solving and teamwork, locally, nationally and internationally, is also an educational objective pursued through activities that aim to acquire a systemic view of the territory,

an adequate knowledge of the English language and basic skills for communication and information management. In particular, the undergraduate course prepares graduates who, in addition to possessing good basic competence in the agro-forestry and mountain environment sectors, have a base of knowledge, skills and abilities applicable in various areas of intervention for the protection and development of mountain areas: from the sustainable management and enhancement of natural, territorial, landscape and agro-ecosystem resources, to the defense of the territory as well as the planning and implementation of territorial development. All this, considering the main environmental and social phenomena taking place in mountain areas (climate change, loss of competitiveness, etc.) and the specific resources on which to leverage, as well as strategies and approaches based on innovation, optimization, enhancement and management of products and services, including ecosystems, generated by agro-environmental and forestry activities in the mountains in various sectors, from the more traditional ones of agriculture, forestry and conservation of the mountain territory, to the sector of environmental education and agri-environmental tourism, as well as the administration, management and marketing of the territory and bioeconomics.

The course activities take place entirely at the UNIMONT campus, which the University of Milan has activated in Edolo (BS), in the heart of the central Alps. This contributes significantly to the acquisition of practical and direct knowledge and awareness of environmental complexity and allows experimentation with the specific organizational and functional articulation typical of small mountainous territorial contexts, favoring the creation of professional profiles prepared to operate taking into account the specificities of the local dimension to plan, implement and/or promote effective valorisation and development processes.

The Undergraduate Course will also provide the educational foundation necessary for access to specialist and Master's degrees in the relevant cultural area. Graduate training includes basic and professional disciplines in biology, chemistry, engineering, technology and economics.

### **Expected learning outcomes**

Pursuant to the provisions of D.M. no. 270/2004 and in compliance with the qualifying educational objectives identified by class L-25, the Bachelor's Degree Course in Development and Protection of the Mountain Environment provides the basic scientific and methodological knowledge necessary to operate in the vast sector of the enhancement and development of mountain territories, as well as the conservation of the environmental heritage and territorial protection and management.

In particular, the course aims to prepare graduates able to:

- identify and carry out analyzes and estimates of the different environmental and territorial resources as well as the services (including ecosystems) to be exploited, in particular, in mountain areas, collecting, analyzing, interpreting the necessary data with scientific and methodological rigor;
- draw up reports and projects on professional, research or experimentation topics and activities using the language, methods and technical tools of the sector, with particular reference to mountain issues;
- continuously update and integrate knowledge based on new acquisition to facilitate innovation transfer processes for the benefit of the valorisation and sustainable development of territories, with particular reference to mountain areas;
- operate professionally for planning, start-up, management and technical assistance in public and private company activities in the agro-environmental, forestry and mountain territorial sectors;
- make a professional contribution to the definition of large-scale initiatives and projects for sustainable development and land management, facilitating the ecological transition, both in the traditional areas of the agro-environmental sector and in the various and related sectors of economic relevance for mountain areas (tourism, marketing and communication, bioeconomics, etc.), in line with the challenges posed by climate change and the need to promote territorial cohesion;
- communicate, also in public, information, ideas, problems and solutions in Italian and foreign languages, usually English, written and orally in the specific area of competence, using the potential of the most modern communication tools, including multimedia;
- work in a group and operate with defined degrees of autonomy, with an orientation towards problem-solving;
- deal with subsequent studies in the agro-forestry and mountain environmental sector, as well as specialization courses and Master's degree courses.

The Undergraduate course also provides all the educational foundations necessary for access to Master's degree courses in the sector. Upon completion of the studies, the degree in Development and Protection of the Mountain Environment is awarded, class of degrees in Agricultural and Forestry Sciences and Technologies - Class L-25.

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

The graduate professional profile is that of a mountain system specialist, capable of identifying the specific natural, agro-environmental, territorial resources in order to enhance them in traditional and innovative, sustainable and quality production processes, and at the same time to protect the environment, through appropriate and specific management approaches, thus facilitating sustainable development processes that are effective in protecting the environment and in reducing the socio-economic differences between mountain and urban areas.

Expected employment opportunities are:

- entrepreneurial activity in the sector of plant, animal, agri-food and forestry production typical of mountain areas and their valorisation (multifunctional farms, processing companies, marketing and promotion of products from typical and traditional mountain supply chains, etc.);
- professional activity of technical assistance and support for the planning, management and monitoring of soil conservation, prevention of hydrogeological instability, protection of the mountain environment, in public and private companies;
- planning and management of intervention for the enhancement and integrated development of internal and mountain areas, through innovative, technological and low-impact methods, tools and approaches for the use and management of the territory, in line with the main national and European strategies and policies, also considering the current environmental and

social challenges connected with climate change and with the reduction of the socio-economic gap between mountain and urban areas, fostering territorial cohesion;

- education and dissemination activities regarding the mountain environmental and agro-forestry context, also in relation to promotion and communication activities of the mountain territory and its specificities.

## **Initial knowledge required**

### **Admission requirements**

Applicants to the degree programme must hold a secondary-school diploma, or other equivalent qualification, and a baseline of knowledge in scientific subjects (mathematics, chemistry, physics and biology).

### **Admission assessment**

Admission to this Bachelor's degree programme is open, subject to a mandatory, non-selective, assessment test before enrolment.

The test will ascertain that the candidate meets admission requirements, i.e. knowledge of key science subjects as provided by upper secondary school, and an understanding of elementary logic.

The test required for admission into the degree programme is TOLC-AV, an online test provided by the Consortium of Inter-University Integrated Access Systems (CISIA - <https://www.cisiaonline.it>).

For test topics and details, please review the page <https://www.cisiaonline.it/en/area-tematica-tolc-agraria-veterinaria/struttura-della-prova-e-syllabus/>. You may sit for the TOLC-AV test at the University of Milan or any other member university of CISIA.

The calendar with available venues and dates is posted to the page <https://tolc.cisiaonline.it/calendario.php?l=gb>.

Registration procedures and deadlines are set out in the call for applications posted to the page <https://vtatm.cdl.unimi.it/it/iscrivorsi>

### **Admission of transfer or graduate students**

Transfer students from a degree programme of the University of Milan, or another university, and graduate students will be waived from the test requirement only if admitted to years subsequent to Year I.

To this end, they will have to submit a specific request for prior assessment of their academic records using the online service as shown in the call for applications.

These candidates must provide a full transcript of records (listing exams, subject areas, credits, grades) and attach the course syllabi. For more details and dates, please refer to the call for applications.

Students admitted to the first year will be required to take the test.

### **Additional learning requirements (OFA) and remedial activities**

Students who are admitted with a score lower than or equal to 4 in the Mathematics section of the TOLC-AV test will have to fulfil additional learning requirements (OFA). Remedial activities will be organized for students with OFA (in the period October-December), both as online exercises on an e-learning platform and as discussion sessions with a tutor. After participating in remedial activities, new students will have to take a final assessment test. Mathematics OFA are prerequisites for all second- and third-year exams. For students who have not passed the OFA final test during the first year, passing the Mathematics exam is a prerequisite for all second- and third-year exams. Learn more at <https://vtatm.cdl.unimi.it/it/studiare/le-matricole>

## **Compulsory attendance**

Course attendance is strongly recommended.

## **Internship criteria**

Internship activities are usually as follows:

- experimental laboratory or field activities, or monitoring of physical processes or production activities with data collection and processing;

- bibliographic and documentary in-depth research.

The internship can be coordinated with integrated workshops on specific topics. Activities relating to integrated laboratories will be presented to students in meetings and posted to the degree programme website.

The internship can only be started after passing all the exams required in Year I.

## **Degree programme final exams**

Upcoming graduates are required to pass a final exam, consisting in the discussion of a written paper, usually on the internship experience, in front of an examining board. The student will write the paper under the guidance of a supervisor, and possibly a co-supervisor. The degree mark will be on a scale of 110. The pass mark is 66/110. Candidates who score 110 may be awarded honours. The examination is public and the minutes must be signed by the members of the board. Regulations for the awarding of degree marks is posted on the page <https://www.unimi.it/en/education/faculties-and-schools/agricultural-and-food-sciences>

## **Notes**

In order to obtain their degree, students must be proficient in English at a B1 level under the Common European Framework of Reference for Languages (CEFR). This proficiency level may be certified as follows:

- By submitting a language certificate attesting B1 or higher level in English and issued no more than three years before the date of submission. You will find the list of language certificates recognized by the University at: <https://www.unimi.it/en/node/297/>). The certificate must be uploaded during the enrolment procedure, or subsequently to the portal <http://studente.unimi.it/uploadCertificazioniLingue>;
- By taking a placement test offered by the University Language Centre (SLAM) in October of the first year. Students who fail the test will be required to take a SLAM course.

The placement test is mandatory for all those who do not hold a valid certificate attesting to B1, B2, or higher level.

Those who have not taken the placement test by the end of October or fail the end-of-course exam six times 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 Degree course in Development and Protection of Mountain Environment offers ample opportunity to study abroad, mainly through the Erasmus + programme involving approximately 30 universities throughout the European Union and the Swiss Mobility Programme. Each year about 5 students choose to spend a period of study/work at these universities. Any specific sectors of the degree course can be developed at partner universities. In general, students who benefit from this opportunity tend to take courses that broaden their scientific knowledge, and to carry out internships or theses in well-known laboratories. A learning agreement, defining the choice of exams and the organization of the internship at the partner university, is drawn up in collaboration with the Erasmus coordinator of the degree course. Before completing the learning agreement, students must obtain formal approval of the examinations to be taken at the host university from lecturers who hold equivalent or similar courses at the University of Milan. The examination grades and the relative credits obtained at partner universities are recognized almost entirely, so students can be sure that results obtained in the host university will then be positively evaluated in their study curriculum. There are also other opportunities for cultural exchanges with Universities that have established agreements with our University but are not part of the Erasmus system. These belong to non-EU areas such as China, Japan, Latin America. Moreover, the extensive network of collaboration and contacts involving most mountain stakeholders at local, regional, national and international levels active at the UNIMONT centre allows the organization of seminars and activities that offer students a unique opportunity to get in touch with the "innovation ecosystem" of European mountain areas, and therefore with the main actors and best practices active at an international level.

### **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  
 Student Desk booking through InformaStudenti

<b>1st COURSE YEAR Core/compulsory courses/activities common</b>		
Learning activity	Ects	Sector
Animal and plant biology	12	BIO/05, BIO/03
Computer knowledge and e-skills	6	NN
English assessment B1 (3 ECTS)	3	NN
Essentials of economics	6	AGR/01
General and inorganic chemistry	6	CHIM/03
Mathematics	6	MAT/09, MAT/01
Organic chemistry	6	CHIM/06
Physics	6	FIS/07
Total compulsory credits		51
<b>2nd COURSE YEAR Core/compulsory courses/activities common</b>		
Learning activity	Ects	Sector
Agronomy for mountain areas	12	AGR/02, AGR/13
Forestry	8	AGR/05
Fruit tree production	8	AGR/03
Geopedology	8	GEO/04, AGR/14
Principles of physiological and metabolic processes in agriculture	10	AGR/16, AGR/13
Rural buildings and land survey	8	AGR/10
Stage	6	NN
Total compulsory credits		60
<b>3rd COURSE YEAR Core/compulsory courses/activities common</b>		
Learning activity	Ects	Sector
Agricultural and forestry mechanization	6	AGR/09
Environmental and Forest Surveying and Economics	8	AGR/01
Livestock Farming in Mountain Areas	12	AGR/19, VET/01
Plant diseases	8	AGR/11, AGR/12
Processing of agri-food products	7	AGR/15
Soil conservation in mountain watersheds	8	AGR/08
Total compulsory credits		49
<b>Further elective courses</b>		
<p>The student has 16 credits available to be allocated to freely chosen training activities. These activities must be consistent with the study plan of the graduate in Development and Protection of the Mountain Environment.</p> <p>Students will be able to acquire credits freely by choosing from the courses offered by the University of Milan or by actively following seminars, conferences, refresher courses or other activities organized by the University or by another institution, always after the favorable opinion of the Academic Board.</p> <p>The Academic Board proposes, in the table below, some training activities organized at the Edolo Campus, to which seminar activities and integrated laboratories on specific topics, coordinated with the internship activity and aimed at drafting the final thesis, can be added.</p>		
Analysis of foods of animal origin to valorizing mountain food chains and consumer protection	3	VET/04
Applied plant ecology for mountain agro-ecosystems	3	BIO/03
Policies and legislation for mountain areas	3	IUS/09
Renewable energies in mountain areas	4	AGR/09
Not activated in the 2023/24 academic year.		
Wildlife management	4	AGR/19
<b>End of course requirements</b>		
Final exam	4	NN
Total compulsory credits		4