

UNIVERSITA' DEGLI STUDI DI MILANO PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26 BACHELOR DEVELOPMENT AND PROTECTION OF MOUNTAIN ENVIRONMENT (Classe L-25 R) Enrolled in the 2025/26 academic year

HEADING

Degree classification - Denomination	L-25 R
and code:	
Degree title:	Dottore
Length of course:	3 years
Total number of credits required to	180
complete programme:	
Years of course currently available:	1st
Access procedures:	Open, subject to completion of self-assessment test prior to enrolment
Course code:	GAA

PERSONS/ROLES

Head of Study Programme

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Degree Course website

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

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

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CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The degree course in Development and Protection of the Mountain Environment provides graduates with specific knowledge in the main sectors of agroforestry and environmental sciences that are necessary for defining a comprehensive and specific vision of mountain territories, essential to promote their sustainable development. In particular, graduates will be able to effectively address the complexity of mountain socio-ecological systems by operating in various areas of intervention: from agroforestry production to the management, protection and valorization of natural, agroforestry, territorial and landscape resources, to the conservation of the territory, as well as the planning and implementation of territorial development initiatives. All this taking into account the main environmental and socio-economic phenomena taking place in these areas such as climate change and loss of competitiveness. Graduates will be able to identify the specific resources on which to leverage and facilitate the application of innovative methodologies and strategies to optimize and valorize products and services, including ecosystemic ones, generated by the environment and mountain agro-forestry activities. These skills can be applied in a wide range of sectors: from traditional ones, such as agriculture, forestry and mountain territory protection, to emerging ones, such as agri-environmental education and tourism, territorial marketing and the sustainable use of natural resources in the context of the bioeconomy.

The trained graduate matches two cultural and professional profiles:

- Technicians with a wealth of knowledge and operational skills that allow them to contribute to the sustainable planning and management of mountain agro- forestry -pastoral enterprises as well as to the valorization of specific production by providing qualified technical assistance in various fields, from production to economic appraisal as well as the environment, and the valorization of ecosystem services and agritourism and rural tourism activities.

- Technicians with a wealth of knowledge and operational skills that allow them to contribute to the management and enhancement of mountain rural and forestry territory, also in terms of ecosystem services of production, protection and culture, as well as to work in parks, in rural and environmental tourism activities and in land management in the monitoring, protection, enhancement and promotion of specific mountain agroforestry and environmental resources with a view to sustainability.

The two figures are not alternatives, but complementary because, if on the one hand the efficiency and competitiveness of a mountain agro- forestry -pastoral enterprise is strongly linked to the specificities of the territory in which it operates and has a key responsibility in the conservation and protection of the resources and the environment in which it operates, on the other hand the management, protection and enhancement of resources, the environment and the territory can only originate from the knowledge of the functioning mechanisms of natural, agricultural and forestry ecosystems. The knowledge and practical skills acquired allow both to deal directly with the world of work in the mountain agro-forestry and environmental sectors and to subsequently specialize through a Master's degree and/or advanced training courses.

The course activities are carried out entirely at the UNIMONT Campus, a location that the University of Milan has activated in Edolo, in the heart of the central Alps. This significantly contributes to the acquisition of practical and direct knowledge and awareness of environmental complexities and allows for experimentation with the specific organizational and functional articulation typical of small mountainous territorial contexts, promoting the formation of professional profiles prepared to operate taking into account the specificities of the local dimension to design, implement and/or promote effective valorization and development processes.

Expected learning outcomes

The Degree Course in Development and Protection of the Mountain Environment provides the basic scientific and methodological knowledge necessary to work in the vast sector of interventions for the enhancement and development of mountain territories, as well as the protection of environmental heritage and land conservation and management.

In particular, the course aims to prepare graduates who acquire the following:

Knowledge and understanding

- basic knowledge in the fields of mathematics, physics, chemistry, plant and animal biology, with particular attention to the applicative aspects of agro-food, agro-environmental and mountain forestry systems;

- basic principles for the planning, management and valorisation of agri-food, agri-environmental and forestry supply chains with particular reference to mountain production;

- knowledge of the methods and tools used for environmental protection and safety of works in the agroforestry and ecosystemic fields, with particular reference to mountain areas;

- basic principles for the economic management of mountain agricultural and agro- forestry -pastoral farms and enterprises and the promotion of products, in the current regulatory and market context;

- knowledge for the management, sustainable valorization and protection of natural agro-forestry resources (soil, water, biodiversity) and agro-ecosystems, with particular reference to mountain areas;

- general principles for the management of rural and forest ecosystems, from pedological aspects to methods for their representation and monitoring (cadastral, topographic, cartographic and landscape aspects);

- the main physical and ecological processes that underlie the evolution and balance of mountain territories in order to promote the sustainable management and protection of natural resources (water, soil, biodiversity), ecosystems, the natural, rural and mountain forest environment;

- knowledge for evaluating and valorizing the main assets and resources of mountain territories, of technical means, of plants and of products of agricultural, food and environmental interest, as well as of the ecosystem services provided by agriculture and forests;

- the general principles relating to the planning and management of agro-forestry interventions and systems, defence, hydraulic-forestry system and recovery of rural and mountain forestry territory, also for the purposes of mitigating hydrogeological risk;

- economic knowledge for the management of agricultural, forestry and pastoral businesses in relation to the market, with particular reference to mountain businesses;

- knowledge of the ethical and regulatory principles of the sector and the institutional structure of mountain territories.

Knowledge and understanding are achieved through differentiated teaching methods such as lectures, laboratory and field exercises, technical visits. Knowledge and understanding are usually assessed through written and oral tests.

Ability to apply knowledge and understanding:

- to identify the most appropriate choices from a technical, technological and economic point of view for the planning and management of intervention in various areas of the agro-forestry sector, by interacting and operating effectively in

interdisciplinary groups in relation to the needs of the different intervention contexts.

- to represent with advanced technological methods the physical and ecological characteristics of mountain territories, and be able to analyse and monitor the environment and processes (also from a quantitative point of view) for the protection, management and sustainable valorisation of mountain territories;

- to apply sector regulations by acting in line with ethical and deontological principles and interact with the various institutional levels.

- to be able to collaborate in the design, testing and management of complex structures and systems of mountain agro-forestry interest (agricultural, agri-food systems, and agro-environmental and forestry engineering interventions);

The abilities to apply knowledge and understanding are achieved, preferably, through differentiated teaching methods such as laboratory and field exercises, seminars on topics of specific interest, presentation and preparation of projects. The ability to apply knowledge and understanding is usually assessed during the final written and oral tests, also in combination with the activities carried out during the exercises and laboratories. The assessments also take into account the ability to integrate the knowledge acquired in different courses.

Making judgments:

- to identify the territorial resources (products and services) to be valorised in the different mountain contexts;

- to identify, collect and interpret data;

- to make decisions and deal with complex situations thanks to an ability to independently integrate knowledge.

These skills are acquired throughout the course of studies and verified through exams and assessment tests, but are developed in particular through free choice activities, the experience of the internship and the writing of the final paper, during which students, through guided activities in specific areas, acquire skills in well-defined sectors, in the consultation of bibliographical material and in the personal re-elaboration of information.

Communication skills:

- to communicate, also in public, information, ideas, problems and solutions in Italian and foreign languages, usually English, written and oral for the exchange of general information and in the specific area of expertise using the potential of the most modern communication tools, including multimedia;

- to update knowledge to present data and draft reports and lectures on professional or research topics and activities using up-to-date data and information and the technical language of the sector, with particular reference to mountain issues;

- to manage institutional communication with a view to transparency of public action, according to the principles that govern the information and communication activities of Public Administrations;

- to work in a team, communicate effectively and operate in interdisciplinary groups, participating in the planning and execution of effective solutions by proactively entering the work environment.

These skills are practiced and verified throughout the training course, in particular through oral and/or written exams with open questions. Furthermore, students are encouraged to participate in seminars and conferences also in English held by specialists in the sector and to take part in study experiences abroad. Communication skills are also strengthened and verified in the phase of drafting, writing and discussing the final paper, which can also be carried out in English.

The internship represents a key moment of training to mature communicative skills with the world of work, with the teaching and technical staff of the university, with other students and, in many situations, also the ability to work as part of a team.

Learning skills:

- meta-cognitive skills and learning abilities to access and successfully attend Master's degree courses, advanced training courses and 1st level master's degrees, even abroad;

- ability to consult bibliographical material, databases and other information online;

- ability to continuously update knowledge from a methodological and content point of view;

- ability to fit into business contexts and the related economic, managerial and organizational aspects of the mountain agricultural and forestry sectors.

These skills are acquired throughout the course of studies through exams, but are developed in particular through free choice activities that include specific learning tests, the experience of the internship and the drafting and evaluation of the final paper during which students, through guided activities in specific areas, acquire skills in well-defined sectors, in the consultation of bibliographical material and in the personal re-elaboration of information.

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

Professional profile and employment opportunities

- 1. Professionals working in forestry, pastoral and mountain production transformation and valorisation sectors

Function in a work context:

The professions included in this category operate in the agro-forestry -pastoral production system for the planning of elements of agricultural, agri-food, livestock, forestry and mountain environmental systems, the improvement of production techniques and the innovation and sustainability of mountain businesses. In particular, the functions performed are divided into the planning and management of mountain plant, animal and forestry production, quality certification and marketing of mountain agro-forestry products, as well as in the agritourism and rural tourism sectors, in the activities of planning, protection and ecologically and economically sustainable management of resources and the agro-forestry, natural and mountain landscape environment.

Skills associated with the function:

Professionals are able to understand, analyse and intervene in the mountain context in relation to the problems of production, valorisation and sustainability of agro-forestry-pastoral products and the defence of the environment and of the rural, natural and agro-forestry landscape of the mountains, with an integrated approach based on multifunctionality. Career opportunities:

They work in public and private companies and firms in the agricultural, livestock, forestry-pastoral, forestry and mountain environmental sectors both as entrepreneurs and as employees or freelance consultants in production and in production valorization sectors, but also in the rural tourism sector, in the protection of the rural and natural environment and in the planning of land and the mountain agro-forestry landscape. They also work in the offices of central and local public administrations, in autonomous companies, in territorial government bodies, as well as in trade associations with a specialized technical function in mountain areas, in universities and research institutions.

- 2. Professionals working in the management and protection of the mountain territory and its resources

Function in a work context:

The professions included in this category operate in support of land conservation, the defense and enhancement of natural, agroforestry and territorial resources, preparing and collaborating in the management of sector plans and projects, integrated and sustainable development projects for mountain areas, as well as soil protection with naturalistic engineering interventions. They also carry out analyses and monitoring of the environment and mountain forest ecosystems, as well as technical, evaluation and economic aspects of mountain agro-forestry and natural resources, their products and ecosystem services provided, as well as their interrelations with other sectors of activity relevant to the mountain socio-economic context (crafts, commerce, tourism, etc.). They can also operate in the monitoring and management of green infrastructures, protected areas and natural parks.

Skills associated with the function:

Professionals are able to identify and understand, analyze, integrate and manage the specific resources of mountain areas, both natural and agroforestry, with particular reference to the potential value of products and services provided, combining productive aspects with the enhancement, protection and sustainable development of the mountain territory.

Career opportunities:

They work in the public or private sector, as employees or entrepreneurs or freelance consultants in environmental and agroforestry companies and businesses, central and local public administrations, in institutions for the management, protection and enhancement of the territory (parks, instrumental bodies, etc.); they also operate in autonomous companies, in Universities, in Research Institutes.

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/iscriversi

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

Language skills

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/39322). 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) between October and December of the first year (or in January for Master's degree programmes). 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 or higher level.

Those who have not taken the placement test by the end of December (end of January for Master's degree programmes) or fail the end-of-course exam six times must obtain the necessary certification privately before graduating.

B2 credit assessment (3 CFU) ? optional course

Among the 16 CFU elective activities, students can choose the English language assessment at level B2 of the Common European Framework of Reference for Languages (CEFR). This level can be certified in the following ways:

- B2 or higher English level verified during the Placement test in the first year or through certification validated during enrollment;

- through a final test of a 60-hour course organized by the SLAM Center, with mandatory attendance and procedures similar to those of the B1 English language assessment.

The optional B2 path can only be accessed once the 3 CFU of English language assessment B1 have been achieved. During the 2nd and 3rd year, the SLAM Center will contact all students who have achieved a B1 in English to choose whether to request the verbalization of an existing B2 level, whether to enroll in the optional B2 course or to make another choice.

I.T.

Students must acquire the 6 credits for Computer and Telematics Knowledge by passing the relevant exam which does not give a grade but only a pass or a fail.

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 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

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

1st COURSE YEAR Core/compulsory courses/activities common				
Learning activity		Ects	Sector	
Animal and Plant Biology		12	(4) BIO/05, (8) BIO/03	
Computer Knowledge and E-Skills		6	NA	
English assessment B1 (3 ECTS)		3	ND	
Essentials of Economics		6	AGR/01	
General and Inorganic Chemistry		6	CHIM/03 MAT/01	
Organic Chemistry		6	CHIM/06	
Physics		6	FIS/07	
	Total compulsory credits	51		
2nd COURSE YEAR (available as of academic year 2026/27) Core/compulsory courses/activities common				
Learning activity		Ects	Sector	
Agronomy for Mountain Areas		12	(8) AGR/02, (4) AGR/13	
Elements of Biochemistry, Plant Physiology and Agro-Food Microbiology		10	(4) AGR/16, (6) AGR/13	
Forestry		8	AGR/05	
Fruit Tree Production		8	AGR/03	
Geopedology		8	(4) GEO/04, (4) AGR/14	
Structures, Planning, Management and Surveying of Mountain Territories		8	AGR/10	
	Total compulsory credits	54		
3rd COURSE YEAR (available as of academic year 2027/28) Co	ore/compulsory course	s/acti	vities common	
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	(6) AGN 19, (4) VET/01	
Plant Protection in Mountain Areas		8	(4) AGR/11, (4) AGR/12	
Soil Conservation in Mountain Watersheds		/ 8	AGR/08	
Son conservation in mountain materialeus	Total compulsory credits	49	101000	
Elective courses	Total compaisory creates			
Elective courses				
The student has to credits available to be anocated to freely chosen training	g activities. These activitie	s mus	t de consistent	
with the study plan of the graduate in Development and Protection of the Mountain Environment.				
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. See also the par	agraph Structure of the c	ourse -	Presentation of	
the study plan.				
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 (for the B2 English language assessment see the Language tests section)				
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	
English proficiency B2 (3 ECTS)		3	ND	
Policies and Legislation for Mountain Areas			IUS/09	
windlife Management		4	AGK/19	
End of course requirements			DT A	
Final Exam Stage		4 6	NA NΔ	
	Total compulsory gradita	10	11/1	
	Total compulsory credits	10		