



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2026/27**  
**BACHELOR**  
**PRODUCTION AND PROTECTION OF PLANTS AND GREEN AREAS**  
**(Classe L-25 R)**  
**Enrolled in 2026/2027 academic year**

### **HEADING**

<b>Degree classification - Denomination and code:</b>	L-25 R
<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
<b>Access procedures:</b>	Open, subject to completion of self-assessment test prior to enrolment
<b>Course code:</b>	GAC

### **PERSONS/ROLES**

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

Prof. Fabio Quaglino

#### **Tutors - Faculty**

Tutor per i piani di studio:

lettera iniziale cognome studenti A-B-C: Prof.ssa Fulvia Tambone

lettera iniziale cognome studenti D-E-F: Prof. Marco Saracchi

lettera iniziale cognome studenti G-H-I-L: Prof. Alberto Spada

lettera iniziale cognome studenti M-N: Prof. Roberto Beghi

lettera iniziale cognome studenti O-P-Q: Prof.ssa Anna Spinardi

lettera iniziale cognome studenti R-S: Prof.ssa Natalia Fumagalli

lettera iniziale cognome studenti T-U-V-Z: Prof.ssa Daniela Lupi

#### **Degree Course website**

<https://ppsv.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 0250316789 Email: [didattica.disaa@unimi.it](mailto:didattica.disaa@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 specific educational objectives of the Bachelor's Degree in Production and Protection of Plants and Green Areas aim to provide graduates with comprehensive training in the agricultural sector. These objectives include acquiring both fundamental knowledge (mathematics, statistics, computer science, physics, chemistry, and biology), applicable in the agricultural field, and specialized knowledge related to major cropping and production systems, plant genetics and physiology, as well as cultivation techniques and crop protection strategies. In addition to fundamental and specialized knowledge, specific skills will be developed, and appropriate research methods will be provided for the sustainable management of agricultural systems and urban green areas. Students will be trained to apply the acquired knowledge and skills in developing solutions to agricultural sector challenges while always respecting environmental sustainability and human health. Furthermore, the Bachelor's Degree provides graduates with the necessary tools to act in accordance with ethical and professional principles, comply with sector regulations, effectively communicate technical and scientific information in both Italian and English - even to non-specialist audiences - and work collaboratively in teams. Based on the knowledge, skills, and tools provided, the program prepares professionals capable of operating in all areas of the agricultural

sector, with a particular focus on plant production and crop protection strategies, technical and economic farm management, and the management of green areas and landscapes. Finally, the program equips students with the necessary tools to access Master's programs and specialized graduate courses, ensuring continuous professional development in agricultural sciences.

### **Expected learning outcomes**

The expected learning outcomes are outlined below according to the European descriptors of academic qualifications (DM 16/03/2007, art. 3, paragraph 7).

#### **Knowledge and Understanding**

Graduates will possess knowledge and understanding of:

- the agricultural production system: herbaceous, tree, and shrub crops; their physiology and ecology; their productive and qualitative characteristics; their relationships with climatic, soil, and biotic factors; conventional and innovative cultivation techniques; and the technical means necessary for managing agricultural systems.
- the biology of pathogens (fungi, bacteria, viruses, viroids, and phytoplasmas), animal pests (insects, mites, nematodes, and rodents), and weeds; their interactions with cultivated plants and beneficial organisms and microorganisms sharing the same ecological niche; and the most effective and environmentally friendly crop protection and defense strategies.
- the design and management of public and private contexts featuring green areas for recreational purposes and ornamental plant production systems.

Knowledge and understanding will be achieved through lectures, seminars, classroom and laboratory exercises, and educational field visits. Interdisciplinary exercises will be organized to expand knowledge and understanding of the topics covered in the degree program. Assessment will be conducted through written and/or oral exams, as well as through the evaluation of internships and the final thesis defense.

#### **Applying Knowledge and Understanding**

Graduates will be able to:

- solve agricultural system-related problems using fundamental mathematical, physical, and chemical tools;
- evaluate and compare data using software for management, statistical analysis, archiving, and graphical representation;
- identify and classify plants at the family and species levels;
- analyze and interpret genetic data, formulate and validate genetic models, and develop plant breeding programs;
- identify physiological key points for achieving high-quality and sustainable production standards while optimizing resource use;
- determine the chemical, physical, and biological properties of agricultural soils;
- apply basic microbiological techniques to agricultural systems;
- quantify plant-environment interactions using simple models, apply agrometeorological measurements to describe cultivation environments, and define the timing and quantitative aspects of agronomic interventions;
- compare and select soil tillage techniques, including conservation agriculture methods; design fertilization plans and calculate humus balance; and develop weed management plans;
- manage fruit, forestry, and nursery enterprises and oversee the maintenance of tree species for public and private green spaces, reforestation, and landscape restoration;
- operate in the cereal, agro-industrial, forage, seed, and feed sectors while using production resources efficiently and sustainably;
- address and solve problems related to hydrostatics and hydrodynamics in uniform flow systems and irrigation planning; design simple irrigation infrastructures and systems;
- select tractors and agricultural machinery to optimize farm operations;
- identify plant stresses (biotic or abiotic) and assess their impact on qualitative and quantitative production; implement appropriate prevention and control measures while safeguarding the environment and human and animal health;
- recognize major agricultural insect species and apply appropriate pest control measures;
- apply basic microeconomic and macroeconomic principles to market dynamics.

The ability to apply knowledge and understanding will also be developed through practical exercises (in classrooms, laboratories, greenhouses, and fields) and internal and external internships. This will be assessed through laboratory activity reports and the evaluation of the internship report.

#### **Making Judgments**

Graduates in Production and Protection of Plants and Green Areas will develop independent judgment skills to evaluate and interpret experimental data and assess the economic and environmental impact of technical interventions and solutions for managing agricultural and ornamental green systems, including urban and peri-urban areas. Judgment skills will be developed through specific activities during exercises in the degree program and internship experiences. Their acquisition will be assessed during internship-related assignments and the final thesis preparation.

#### **Communication Skills**

Graduates will acquire knowledge and tools, including IT resources, for technical and scientific communication, as well as for data analysis and discussion. These tools will enable them to communicate effectively in written and oral forms, including through innovative communication systems. They will also develop proficiency in written and spoken English for professional purposes, scientific exchange, and general communication, particularly in scientific terminology and technical contexts. The achievement and assessment of communication skills will occur through oral and written exams, individual reports, project presentations, discussions, group work, and the final thesis defense before the academic committee.

#### **Learning Skills**

Graduates will develop study methodologies and competencies necessary for understanding technical and scientific articles and conducting bibliographic research, both through printed sources and digital databases. They will be able to

independently collect, organize, study, and process relevant materials to address scientific, technical, and practical issues in their professional field. They will also acquire the tools needed for continuous knowledge updating. During internships, they will enhance their ability to work in teams and act according to ethical and professional principles while adhering to industry regulations. Learning skills will be developed through various training activities focused on discussing topics covered in lectures, practical exercises, and internship activities. Assessment will be based on individual and group reports, exams, internship activities, and the final thesis evaluation.

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

Reference Professional Profile: Agronomic Technician.

Graduates in Production and Protection of Plants and Green Areas possess the knowledge and skills necessary to perform functions related to the planning and management of agricultural systems for food, arboricultural, and ornamental crops. They can take on roles aimed at improving productivity and protecting agricultural and ornamental crops by applying design, management, and operational expertise to balance profitability with environmental sustainability and product quality. Within agri-food supply chains and sectors providing technical means for agriculture, graduates can oversee and support production processes and product commercialization. Their competencies also enable them to engage in: (i) research activities related to crop genetic improvement, agricultural experimentation, and the development of tools for plant production (fertilizers, plant protection products, agricultural machinery); (ii) advisory roles in selecting energy crops and managing agricultural waste for bioenergy production; (iii) planning and development of urban and peri-urban green spaces. Graduates can contribute to the development of agricultural and ornamental enterprises by providing technical assistance services for plant production and protection in compliance with business procedures. Graduates in Production and Protection of Plants and Green Areas can register with the Order of Agronomists and Foresters after passing the state exam required for professional qualification.

The competencies associated with this professional profile, acquired through the core and related courses of the degree program, specifically include: production disciplines (agronomy, soil chemistry, biochemistry and physiology of cultivated plants, agricultural genetics, agricultural microbiology, herbaceous and tree crop cultivation, agricultural mechanization, and irrigation management) and protection disciplines (arthropod and fungal ecology, plant pathology, and agricultural entomology) focusing on food, arboricultural, and ornamental crops, and economic and environmental knowledge, essential for the sustainable management of agricultural enterprises and agroecosystems.

Graduates can work in various sectors, including:

- specialized agricultural companies producing cereals, fruit, vegetables, and flowers, in open fields or protected environments;
- companies involved in the distribution, marketing, and quality control of agri-food products;
- companies specializing in the design, maintenance, and management of urban and peri-urban green spaces;
- plant pathology diagnostics and consulting firms for plant, stored product, and environmental protection;
- companies producing and selling technical, chemical, and biological products for sustainable plant, stored product, and food protection;
- public institutions (Municipalities, Provinces, Regions, Reclamation Consortia, Parks, and Protected Areas);
- companies supplying agricultural machinery, structures, and equipment;
- agricultural consortia, producer associations, trade associations, and agricultural cooperatives;
- companies involved in the processing, marketing, and distribution of agri-food products;
- freelance work, either independently or within professional firms specializing in agricultural systems.

### **Initial knowledge required**

Entry Requirements and Prerequisites

To be admitted to the degree program, candidates must hold a five-year secondary school diploma or an equivalent qualification obtained abroad and recognized as valid. Additionally, they must have a solid foundation in basic scientific disciplines (mathematics, chemistry, physics, and biology) at a level equivalent to that provided by secondary education. Logical reasoning skills and proficiency in written and oral Italian are also required.

Knowledge and Personal Preparation Assessment

The degree program has open admission, but an entry assessment test is mandatory before enrollment. This non-selective test is designed to verify the initial preparation in basic scientific subjects (mathematics, chemistry, physics, and biology) and elementary logical reasoning skills at a level consistent with secondary education.

The test required for admission is the TOLC-AV, an online test administered by CISIA (Interuniversity Consortium for Integrated Access Systems - <https://www.cisiaonline.it>). Information about the test structure and topics can be found at the link <https://www.cisiaonline.it/area-tematica-tolc-agraria-veterinaria/struttura-della-prova-e-syllabus/>. The TOLC-AV can be taken at the University of Milan or at any other university that is part of the CISIA network. The test calendar, including available locations and dates, is published at this link. Registration procedures and deadlines are detailed in the admission notice available at this page.

Admission by Transfer or for Graduates

Students already enrolled in a degree program at the University of Milan or another university, as well as those who have already graduated, may be exempt from the entry test only if admitted to years beyond the first. To request exemption, candidates must submit a prior evaluation request through the online service indicated in the admission notice. Applicants must declare all completed exams, including subject areas, credits, and grades, and attach course syllabi. Further details on the procedure and deadlines are provided in the admission notice.

Additional Learning Requirements (OFA) and Remediation Methods: students admitted to the course of study who do not achieve a score higher than 3 in the Mathematics section of the TOLC-AV are assigned additional learning obligations (OFA).

To help students fulfill these requirements, online support activities with tutors will be organized between October and December, followed by a final assessment test. If the test is not passed within the first year, the student will not be allowed to take second- and third-year exams until they have passed the Mathematics exam. More information is available at the link <https://ppsv.cdl.unimi.it/studiare/le-matricole>.

### **Compulsory attendance**

Attendance of educational activities (lectures, classroom and laboratory exercises, educational visits) is not mandatory but highly recommended.

### **Internship criteria**

The internship can only begin after passing all first-year exams. It is highly recommended to start the internship no later than the second semester of the second year. The internship can be carried out within departmental structures and/or external entities (companies, research centers, professional firms, etc.), including abroad (Erasmus mobility). All internship-related activities will be planned and carried out under the supervision of a designated faculty member who will serve as the supervisor.

### **Degree programme final exams**

The final examination represents an individual learning experience that completes the student's academic journey. The student must present a written report on their internship activity, which will be illustrated and discussed. The preparation of the report should be proportional to the number of credits (CFU) assigned to it by the curriculum, which is 6. On the degree program website, at the page <https://ppsv.cdl.unimi.it/studiare/laurearsi>, a document titled "Finalità e struttura del tirocinio di laurea" ("Purpose and Structure of the Graduation Internship") is available, providing guidelines for the internship and the drafting of the final report. The evaluation committee for the final examination will assess the student's overall academic performance and the level of maturity achieved. The final report may be written in either Italian or English. The final examination contributes to determining the final degree grade, which is expressed on a scale of 110.

### **Notes**

In order to obtain their degree, students are required to have a B1 level of proficiency according to the Common European Framework of Reference for Languages (CEFR). This level of proficiency can be certified as follows:

- by submitting an official language certificate at B1 level or higher, issued no more than three years before the submission date. The list of language certificates recognized by the University is available at <https://www.unimi.it/en/node/39322>.

The certificate must be uploaded during enrolment or later through the portal <http://studente.unimi.it/uploadCertificazioniLingue>.

- by taking a placement test administered by the University Language Centre (SLAM) between October and December (January for Master's degree courses) of the first year. Students who do not pass the test will be required to attend a language course offered by SLAM.

The placement test is compulsory for all students who do not already hold a valid certificate.

Students who do not take the placement test by the end of December (by the end of January for Master's degree courses), or who fail the end-of-course test after six attempts, must obtain a language certificate privately before graduating.

Students must obtain the 6 CFU allocated to Computer and Statistical Knowledge by passing the corresponding exam, which is graded on a pass/fail basis without a numerical score.

## **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 Course of study in Management of Cultivated Plants and Landscaping gives many opportunities for stages abroad mainly through the Erasmus+ programme. About 30 foreign Universities of the EU are involved in this students exchange. Globally every year about 5 students of this course of study make a stage in these universities. The areas of study which can

be followed by the students abroad are almost all those included in this course of study. In general, students who make a stage abroad attend local courses or participate in research for the preparation of their thesis. The examination scores and the related UFC obtained in the partner universities are almost entirely acknowledged by our university for the curriculum studies. Other possibilities exist in terms of cultural exchange with non EU universities (in China, Japan, Latin America) not involved in the Erasmus programme.

### 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 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

<b>1st COURSE YEAR Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Animal Biology	5	BIOS-03/A
English assessment B1 (3 ECTS)	3	NN
Essentials of Economics	6	AGRI-01/A
General and Inorganic Chemistry	6	CHEM-03/A
General and Systematic Botany	10	(3) BIOS-01/B, (7) BIOS-01/A
Mathematics	6	(2) MATH-01/A, (4) MATH-02/A
Organic Chemistry	6	CHEM-05/A
Physics	6	PHYS-06/A
	Total compulsory credits	48
<b>2nd COURSE YEAR (available as of academic year 2027/28) Core/compulsory courses/activities common</b>		
<b>Learning activity</b>	<b>Ects</b>	<b>Sector</b>
Agricultural Microbiology	6	AGRI-08/A
Computer Technology and Statistics Knowledge	6	NN
Field Crops	8	AGRI-02/A
Fruit Tree Production	8	AGRI-03/A
General Agronomy	14	AGRI-02/A
Plant Genetics	8	AGRI-06/A
Plant Physiology and Biochemistry	8	AGRI-06/B
Soil Chemistry	6	AGRI-06/B
	Total compulsory credits	64

**3rd COURSE YEAR (available as of academic year 2028/29) Core/compulsory courses/activities common**

Learning activity	Ects	Sector
Agricultural Entomology	8	AGRI-05/A
Agricultural Machines and Mechanization	6	AGRI-04/B
Applied Ecology of Arthropods and Fungi	6	(3) AGRI-05/B, (3) AGRI-05/A
Elements of Hydraulics and Irrigation	6	AGRI-04/A
Plant Pathology	8	AGRI-05/B
	Total compulsory credits	34

**Elective courses**

The curriculum includes 18 credits (CFU) freely chosen by the student. These can be allocated to courses offered within the degree program, courses from other degree programs within the Faculty and the University, or other educational activities that can be evaluated for credit.

Such activities include participation in seminars, conferences, training courses, or other events organized by the University or other institutions, provided they are relevant to the student's academic path, typically up to a maximum of 4 credits. To have these activities recognized, students must seek prior approval from the Academic Board and consult their academic tutor.

According to Article 5, paragraph 7, of Ministerial Decree 270/2004, up to 48 credits (CFU) may be recognized from certified professional knowledge and skills and/or educational activities at the post-secondary level, subject to approval by the Academic Board of the degree program.

For further details, refer to the section "Course Structure – Study Plan Submission".

The Academic Board recommends the following elective courses, grouped into two specialized packages, as particularly suitable for students pursuing a degree in Production and Protection of Plants and Green Areas.

**Package: Urban Green Defense and Ornamental Crop Protection**

- Ornamental Arboriculture and Urban Green Spaces
- Plant Pathology Laboratory for Ornamental Greenery
- Urban Entomology and Urban Parasitology

**Package: Design and Management of Green Areas**

- Surveying, Drawing, and Materials for Green Areas
- Ornamental Arboriculture and Urban Green Spaces
- Floriculture and Turfgrass

Additionally, for both packages, faculty members organize a 10 ECTS Laboratory (internship).

Beekeeping	4	AGRI-05/A
Floriculture and Turfgrasses	6	AGRI-02/B
Forest ecology and management	4	AGRI-03/B
GIS (Geographical Information System) for Rural Land	4	AGRI-04/C
Ornamental Arboriculture and Urban Forestry	6	AGRI-03/A
Plant pathology laboratory for ornamental plants	6	AGRI-05/B
Postharvest Physiology and Quality of Horticultural Commodities	6	AGRI-03/A
Survey, Map Drawing and Materials for Green Areas	6	AGRI-04/C
Urban Entomology and Parasitology	6	AGRI-05/A
Vegetables Production	6	AGRI-02/B
Viticulture	6	AGRI-03/A

**End of course requirements**

Stage	10	NN
Final Exam	6	NN
	Total compulsory credits	16

**COURSE PROGRESSION REQUIREMENTS**

There are no prerequisites for registering for exams. However, we strongly recommend that you pass first-year exams before enrolling in Year II and sitting further exams. The internship can only be started after passing all the exams required in Year I.