



**UNIVERSITA' DEGLI STUDI DI MILANO**  
**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2023/24**  
**BACHELOR**  
**ENVIRONMENTAL SCIENCE AND POLICY - (Classe L-32)**  
**enrolled from 2018-19 a.y.**

### HEADING

<b>Degree classification - Denomination and code:</b>	L-32 Environmental sciences
<b>Degree title:</b>	Dottore
<b>Curricula currently available:</b>	Environmental Management and Sustainability / Environmental Sciences and Technologies
<b>Length of course:</b>	3 years
<b>Total number of credits required to complete programme:</b>	180
<b>Years of course currently available:</b>	1st , 2nd , 3rd
<b>Access procedures:</b>	Cap on student, student selection based on entrance test
<b>Course code:</b>	F2A

### PERSONS/ROLES

#### Head of Study Programme

Prof.ssa Stefanella Stranieri

#### Tutors - Faculty

Tutor per l'orientamento in ingresso: prof. Giacomo Aletti, prof.ssa Michela Sugni, dott.ssa Elisa De Marchi, dott. Mirko Magni

Tutor per piani di studi e trasferimenti: prof. Danilo Bertoni, prof.ssa Alessia Cavaliere, prof. Maurizio Maugeri, prof.ssa Alessandra Micheletti, prof. Marco Parolini, dott. Daniele Curzi

Tutor per la mobilità internazionale e l'Erasmus: prof. Luigi Orsi

Tutor per stage e tirocini: prof. Danilo Bertoni

Tutor per laboratori e altre attività: prof. Marco Parolini;

Tutor per le pari opportunità: Giangiacomo Beretta

#### Degree Course website

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

#### Course management

via Celoria 2 - II piano Phone 02503 16501/16475 Contattaci attraverso InformaStudenti <https://www.unimi.it/it/node/359>

#### Student registrar

via Celoria 18 Phone 02503 25032 <https://www.unimi.it/it/node/360> <https://www.unimi.it/it/node/359>

#### Link to degree course regulations

<https://www.unimi.it/it/corsi/corsi-di-laurea/scienze-e-politiche-ambientali>

### CHARACTERISTICS OF DEGREE PROGRAMME

#### General and specific learning objectives

The course aims to achieve the following objectives:

- the transmission to students of a systemic culture related to the natural and human environment;
- the training of graduates able to use the good practices of scientific methods and have adequate theoretical knowledge and operational skills to analyze, interpret and explain environmental phenomena and processes, and to face and solve complex problems that arise in this area;
- the preparation of graduates able to read environmental issues on several levels, using a multidisciplinary and interdisciplinary approach;
- the training of graduates able to operate autonomously, to work in a group and to manage operational situations into the workplace;
- the preparation of graduates able to use at least one European Union language in addition to Italian, in relation to the specific context of reference;

- the provision of cognitive tools that allow graduates to immediately understand the work and professional contexts or to continue their studies in master's programs (first level) or master's degree courses.

### **Expected learning outcomes**

In the first two years of the course, the student is expected to acquire knowledge and skills relating to the foundations of formal and quantitative disciplines (mathematics, statistics and computer science), as well as of "hard sciences" (chemistry, physics, earth sciences). In the first two years the student will also acquire in-depth knowledge and skills in the "life sciences" (biology, ecology, agronomy) and in the economic-legal-social disciplines (political economy, management, law), with particular reference to environmental issues. In the third year, the student will have to further deepen his knowledge and enhance his skills and abilities, also from an operational point of view, in the natural sciences and in the sciences of society, selecting the path that, among those proposed by the Degree Course, fits with the cultural vocation and professional aspirations of the student.

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

On the basis of the knowledge, skills and abilities acquired, the graduates of the degree course in Environmental Sciences and Policies will be able to aspire to qualified jobs in companies and private organizations, active - both in the regional context, as well as in the national or international context - in all branches and in all sectors of industry and services for which the relationship with environmental problems in their multiple forms is fundamental (from the energy industry to the agro-food industry, from the green economy to consultancy services companies, companies in the preparation of environmental and social budgets, from companies that provide environmental impact forecasts to those that provide landscape and territorial planning services). They will also be able to aspire to qualified jobs in the public administration bodies, whose involvement in the control and management of environmental problems and in the implementation of interventions and regulatory policies in this area, again at all levels (local, regional, national and supranational), is becoming more and more pressing, pervasive and ask for experts able to combine robust knowledge and skills in the natural sciences with competences and operational skills in the management and legal field.

Examples of the professional profiles, for which the course prepares, are:

- Environmental manager in agribusiness, energy sector, firms of the green economy
- Expert in analysis and monitoring of natural resources;
- Expert in resource protection and management of rural environments;
- Expert in spatial analysis and environmental impact studies;
- Environmental specialist

### **Initial knowledge required**

Requirements and knowledge required for access

- high school diploma or equivalent foreign qualification pursuant to D.M. 270 of 22 October 2004.

Methods for verifying knowledge and personal preparation

- admission test

The admission provides a test for access "TOLC" (CISIA On Line Test).

In the first year are available 100 places.

The TOLC can be taken at the University of Milan or any other university belonging to the CISIA (Interuniversity Integrated Systems for Access Consortium). Registrations to the TOLC must be made on the CISIA website (<https://www.cisiaonline.it>).

- exam topics

The TOLC valid for the enrollment in the Bachelor of Science in Environmental Sciences and Policies is the TOLC-S, which comprehends the following sections: basic mathematics (20 questions-50 minutes), reasoning and problems (10 questions-20 minutes), comprehension of the text (10 questions-20 minutes), basic sciences (10 questions-20 minutes).

Each question has 5 possible answers. Only one of these is correct. In the TOLC-S there is an additional section related to the evaluation of the English language, which consists of 30 questions to be completed in 15 minutes. The result of this part does not contribute to the score of the test.

The final score of the test is the result of the following rules:

- +1 for each correct answer, -0.25 for each wrong answer, 0 for each answer not given.
- +1 for each correct answer, 0 for each wrong or not given answer in the English section.

The students will be able to enroll on the basis of a ranking within the deadlines indicated in the announcements of admission.

- consult the admission notice and the following link: <https://spa.cdl.unimi.it/it/iscriversi>

Additional educational obligations and methods for recovery

Students who have not reached a score greater than or equal to 10 in the mathematics module will be assigned Additional Educational Obligations (OFA).

For students with OFA, support activities will be organized in the period October-December, and a final test.

In the absence of this evidence, the student will not be able to take any second-year exams before having passed the mathematics exam.

Information on the page <https://spa.cdl.unimi.it/it/studiare/le-matricole>

Access for transfer or for students who have already graduated

Students who are already enrolled in a degree course of the University of Milan, in another University or already graduated, can be exempted from the test only if they meet the necessary requirements to be admitted to second year. In specific, they must certify the acquisition of 30 credits, 9 of which can be validated for the mathematics exam.

For more details on the procedure, please refer to the admission announcement.

Students admitted to the first year must enroll by following the procedure described at the following link:

<https://spa.cdl.unimi.it/it/iscriversi>

### **Compulsory attendance**

Attendance is not compulsory, however attendance at didactic activities with laboratories, field activities, internships, etc. is strongly recommended.

### **Degree programme final exams**

The final exam consists in the presentation of a theoretical, empirical or experimental paper, or in the presentation of a report related to an internship. This paper or report plays a formative role that completes the individual three-year course of study.

The paper or report can also be written in English.

To be admitted to the final exam, the student must have earned 174 credits, including the credits required for knowledge of the foreign language. In particular, they must acquire at least 42 CFU in basic training activities, at least 66 CFU in characterizing training activities, at least 18 CFU in similar or supplementary training activities. They will also have to acquire 18 CFU in freely chosen training activities, 3 CFU related to the verification of knowledge of the foreign language (English), 3 CFU for laboratory activities, field activities or soft skills, 6 CFU for internal or external internship.

### **Campus**

The classrooms are located in Milan, Città Studi, mainly in via Celoria 20

### **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) between October and December 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 December 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**

Within ERASMUS+ program many agreements with international universities specializing in teaching and research on environmental issues. have been build up.

Among these, some examples of agreements include the Universities of Genève (CH), Justus-Liebig-Universität Giessen (DE), the Agricultural University of Athens (GR), the Josip Juraj Strossmayer University of Osijek (HR), the Wageningen University (NE), the University of Helsinki (FI) and the University of Agder (NO).

During the study period Erasmus students will attend both classes and exams, and they can also conduct research for their dissertation. The student admitted to the mobility program must submit a proposed study plan that includes the educational activities he or she plans to carry out abroad. The number of CFUs in the proposed plan should, as far as possible, correspond to those the student would acquire in an equivalent period at his or her own university. The proposed activities, chosen within the framework of the educational activities of the host university, should be consistent with the educational project of the degree program. The proposed plan must be submitted to the Graduate Course Erasmus Committee for approval. Where deficiencies are found in the core courses, the Commission may ask the student to supplement the syllabus of one or more courses taken at the host University with an exam to be conducted at his or her own University on an agreed supplementary syllabus. At the end of the mobility program, in compliance with the University guidelines, the passed exams present in the approved study plan will be recorded in the student's career under the original name of the course in the host foreign university. The relevant ECTS credits will be converted into CFUs; the grade reported will be expressed in thirtieths.

## 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 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 to all curricula</b>		
Learning activity	Ects	Sector
Administrative and environmental law	6	IUS/10
English assessment B1 (3 ECTS)	3	NN
Foundations of biology	9	BIO/06
Foundations of inorganic and organic chemistry	9	CHIM/03, CHIM/06
Fundamentals of Earth sciences	9	GEO/02
Mathematics	9	MAT/09, MAT/01, MAT/02, MAT/03, MAT/04, MAT/05, MAT/06, MAT/07, MAT/08
Physics	6	FIS/08, FIS/07, FIS/06, FIS/05, FIS/04, FIS/03, FIS/02, FIS/01
Probability, statistics and computer science	9	INF/01, MAT/06
Total compulsory credits		60
<b>2nd COURSE YEAR Core/compulsory courses/activities common to all curricula</b>		
Learning activity	Ects	Sector
Botany	9	BIO/02, BIO/01
Ecology	9	BIO/07
Environmental and landscape geology	9	GEO/05
Environmental biochemistry and microbiology	6	BIO/10, BIO/19
Environmental economics	6	SECS-P/01
Microeconomics	9	SECS-P/01
Zoology	9	BIO/05
Total compulsory credits		57
<b>3rd COURSE YEAR Core/compulsory courses/activities common to all curricula</b>		
Learning activity	Ects	Sector
Environmental management	6	SECS-P/08

Natural resources and public goods economics and policy		6	AGR/01
Total compulsory credits		12	
<b>COURSE YEAR UNDEFINED Core/compulsory courses/activities common to all curricula</b>			
Learning activity		Ects	Sector
Internship		6	NN
Total compulsory credits		6	
<b>Further elective courses common to all curricula</b>			
The student will have to acquire 18 credits among all the offered training activities and all the courses activated by the University, after evaluation by the tutor. The courses not already chosen among the curricula can be selected.			
The student must also acquire 3 credits by choosing one of the laboratories offered by the degree course. Alternatively, students can choose a training activity in soft skills. For more details, see the following web page: <a href="https://www.unimi.it/en/study/bachelor-and-master-study/following-your-programme-study/soft-skills">https://www.unimi.it/en/study/bachelor-and-master-study/following-your-programme-study/soft-skills</a> . For the a.y. 23/24 the degree course offers the following laboratories:			
Excel laboratory		3	NN
LCA - Life Cycle Assessment laboratory		3	AGR/09
The student must choose one of the two curricula: Curriculum A - Environmental Management and Sustainability; or Curriculum B - Environmental Sciences and Technologies. Then the student will have to choose 3 courses among those provided for the chosen Curriculum.			
During the second year, the student will have to attend the "Safety for field activities" course.			
<b>End of course requirements common to all curricula</b>			
Final exam		6	NN
Total compulsory credits		6	

## ACTIVE CURRICULA LIST

Environmental Management and Sustainability Course years currently available: 1°, 2°, 3°  
Environmental Sciences and Technologies Course years currently available: 1°, 2°, 3°

### Procedure for choosing a curriculum

In the second year the student presents the study plan, which provides for the choice of one of the two curricula: "Environmental management and sustainability policies" or "Sciences and technologies for the environment and its protection", with the specification of three courses among those listed in the Study Manifesto as characterizing the chosen curriculum, as well as the indication of courses and others educational activities a choice of the student for a total of 18 ECTS. This last choice can be made in complete freedom within the overall educational offer of the University, provided that the chosen courses and training activities are consistent with the training project presented by the student with his / her own study plan. The courses not already chosen, among those characterizing the selected curriculum, as well as all the courses characterizing the unselected curriculum are naturally available for the free choices of the students.

Study plan submission: second year's students must submit the study plan from 15 September to 31 ottobre 2023. Any other information: <https://www.unimi.it/en/node/122/>

Sudy plan submission is necessary in order to take non-compulsory exams.

The presentation or variation of the piano of studies in periods other than that specified or by non-enrolled students, all academic in question, is not allowed. The verification of the correspondence between the last approved study plan and the exams taken is a necessary condition for admission to the same degree. If, upon submission of the graduation application, the student's career does not comply with the approved study plan, the student cannot be admitted to the graduation exam.

Students can also choose training activities in soft skills.

These activities have a limited number of places available, and attendance is compulsory. For further information see the page: <https://www.unimi.it/en/study/bachelor-and-master-study/following-your-programme-study/soft-skills>

## CURRICULUM: [F2A-A] Environmental Management and Sustainability

### Qualifying Training Objectives

The aim of the curriculum "Environmental management and sustainability policies" is to deepen topics from the economic, legal and social sciences with reference to environmental issues.

### Skills acquired

Students will be able to have a very good knowledge of environmental issues and their management

### Professional profile and employment possibilities

Professional profiles:

- Environmental manager in agribusiness, energy sector, firms of the green economy
- Expert in analysis and monitoring of natural resources;
- Expert in resource protection and management of rural environments;

- Expert in spatial analysis and environmental impact studies;
- Environmental specialist

Professional fields: Consulting firms, companies, institutions

<b><i>Further elective courses Curriculum-specific features Environmental Management and Sustainability</i></b>		
<b>Choose 3 of the following courses:</b>		
Administrative law of sustainable development	6	IUS/10
Agri-food policy and environmental sustainability	6	AGR/01
Climate change economics and policy	6	SECS-P/01
Environmental sustainability of intensive breeding	6	AGR/10
Globalization and environmental policy	6	AGR/01
Marketing and Sustainability	6	SECS-P/08, SECS-P/07
Sustainability of food production	6	AGR/15
Sustainable innovation of animal nutrition	6	AGR/18

#### ***CURRICULUM: [F2A-B] Environmental Sciences and Technologies***

#### **Qualifying Training Objectives**

The aim of the curriculum "Sciences and technologies for the environment and its protection" is to deepen the topics of the natural sciences and biological sciences with reference to environmental problems.

#### **Skills acquired**

Students will be able to have a deep understanding of the environment and nature with a scientific approach.

#### **Professional profile and employment possibilities**

Professional profiles:

- Environmental manager in agribusiness, energy sector, firms of the green economy
- Expert in analysis and monitoring of natural resources;
- Expert in resource protection and management of rural environments;
- Expert in spatial analysis and environmental impact studies;
- Environmental specialist

Professional fields: research centres

<b><i>Further elective courses Curriculum-specific features Environmental Sciences and Technologies</i></b>		
<b>Choose 3 of the following courses:</b>		
Applied ecology	6	BIO/07
Biodiversity management and conservation	6	BIO/05
Climatology	6	GEO/04
Environmental Chemistry	6	CHIM/12
Environmental Genetics	6	BIO/18
Environmental toxicology	6	BIO/14
Evolutionary biology and phylogeny	6	BIO/05
Foundations of ecotoxicology	6	BIO/07
Foundations of physics for environmental sciences	6	FIS/07, FIS/06
Human health and environmental risk	6	MED/04

#### ***COURSE PROGRESSION REQUIREMENTS***

There are no prerequisites.