DESCRIPTION OF THE CURRICULUM

(TEACHING REGULATIONS OF THE COURSE)

MASTER'S DEGREE COURSE IN ENVIRONMENTAL SCIENCES

(LM-75R)

academic year 2025/26

Outline

Art. 1 - General characteristics and organization

The Master's Degree Course in Environmental Sciences, class LM-75R – Sciences and technologies for the environment and the territory – is activated according to the educational regulations of the academic year 2025/2026.

The course in brief

The Master's Degree in Environmental Sciences aims at training highly qualified and specialized graduates capable of applying multidisciplinary skills to the understanding, diagnosis, prevention, and resolution of environmental problems, including direct responsibility for projects and research facilities. Their high-level and competitive preparation allows them to enter both national and international fields and scientific research.

The Master's Degree in Environmental Sciences offers a highly specialized curriculum, designed to equip students with advanced skills to address major environmental challenges. The program focuses on the analysis and management of geological risk, the assessment of environmental impacts related to chemicals, the study of the effects of climate and global change, and the conservation of biodiversity, with an interdisciplinary approach toward sustainability and risk prevention.

Climate and Global Change: Students acquire theoretical and practical knowledge to analyze complex data and develop predictive models, with the aim of identifying, quantifying, and managing emerging environmental issues. Training activities include the use of technological tools and advanced methodologies for climate change mitigation and adaptation, thus contributing to the sustainable development.

Geological Risk: The program provides specific skills for collecting, analyzing, and modeling geological-stratigraphic, geomorphological, and cartographic data. Students learn to assess the vulnerability of the physical environment and develop strategies for preventing and reducing risks associated with geological events, with direct applications in land management and environmental safety.

Chemical Risk: The curriculum provides a solid scientific background in environmental and health risk assessment related to industrial and pharmaceutical chemicals, pesticides, and biocides. Students explore the concepts, strategies, and tools needed to assess the fate of contaminants in the environment and their effects on ecosystems and humans, as well as the main sector regulations, including the Biocidal Products Directive, the European Water Framework Directive, and the European Water Framework Directive.

Conservation and Enhancement of Biodiversity: This program prepares students to design and implement interventions aimed at protecting natural heritage and biodiversity. Training activities include environmental monitoring, active ecosystem conservation, and scientific dissemination, with applications in the naturalistic and educational fields.

Thanks to a methodological approach combining advanced theoretical training with practical field applications, the Master's Degree in Environmental Sciences offers an excellent educational opportunity for those who wish to actively contribute to environmental protection and the sustainable management of natural resources. The degree program is organized in the two locations of the university: classes are held

simultaneously in Como and Varese via videoconference, allowing students to choose their preferred location, with the instructor present at either location alternatively.

The structure responsible for the course is the Department of Science and High Technology. The Program Coordinator is Prof. Andrea Pozzi.

The Didactic Secretariat receives by appointment in via Valleggio 11 (4th floor) and replies to emails through INFOSTUDENTI. More information about this can be found at the following link: https://www.uninsubria.it/servizi/tutti-i-servizi/infostudenti-servizio-informazioni-gli-studenti

Art. 2 - Teaching calendar of the course

Educational activities take place in Como. The internet address of the course is the following: https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/scienze-ambientali

The lesson calendar is published under the page **LESSON TIMETABLE:** https://www.uninsubria.it/formazione/offerta-formativa/corsi-di-laurea/scienze-ambientali

The teaching calendar is divided into semesters:

I semester from **22 September 2025 to 19 December 2025**

II semester from 23 February 2026 to 29 May 2025

Exams

There are at least 6 sessions for each course during the period of lessons suspension. The calendar of the exams is published on the page https://uninsubria.esse3.cineca.it/ListaAppelliOfferta.do

Art. 3 - Education goals, expected learning outcomes and career opportunities

Graduates of this master's degree program will acquire interdisciplinary scientific, legislative, and decision-making training that will enable them to comprehensively address the environmental challenges posed by both natural and anthropogenic land development. They will also assess environmental quality related to anthropogenic emissions, in toxicological and ecotoxicological terms, and will be able to address the associated risks associated with global climate change.

For each curriculum, theoretical training activities will be complemented by practical laboratory and field activities and exercises, preferably interdisciplinary.

CLIMATE AND GLOBAL CHANGE AREA

Knowledge and understanding

The courses in this area provide the knowledge necessary to understand and manage complex environmental issues and critical issues related to the impacts of Climate and Global Change. The structured curriculum allows for the development of a multidisciplinary knowledge of the abiotic and biotic components of ecosystems, their interactions, and processes, to identify and quantify the impacts of climate change and associated feedbacks, as well as to assess change trends and identify system vulnerabilities. The courses enable

students to acquire technical and methodological skills, both theoretical and practical (in the laboratory and in the field), essential for studying and, even more so, assessing and quantifying impacts and designing concrete adaptation and mitigation strategies and actions related to the impacts and risks of Climate and Global Change.

Ability to apply knowledge and understanding

The goals of the courses in this area are to make students:

- able to use the knowledge and technical skills acquired to address issues related to the diagnosis, monitoring, and resolution of environmental problems linked to the impacts of climate and global change;
- able to manage and organize data from various disciplines and apply the acquired experimental methods appropriately to various environmental issues;
- use one's skills to monitor and assess the quality and vulnerability of the natural environment and its interactions with human activities, and to design and implement monitoring networks to assess the integrity of natural systems and diagnose the effects of human activities on the environment;
- able to contextualize ongoing climate change by framing it within a broad time frame, relating climate dynamics to those of other components of the Earth system;
- apply one's knowledge to design and implement adaptation and mitigation interventions.

GEOLOGICAL RISK AREA

Knowledge and understanding

The courses in this area provide the knowledge necessary to understand the endogenous and exogenous processes and dynamics that modify the Earth's surface and the interrelationships between the natural physical environment and human activity. They also provide the knowledge for understanding interventions aimed at preventing, protecting, and mitigating geological risk phenomena. The courses provide the theoretical foundations for analyzing and understanding the physical parameters of the land, natural processes and their associated risks, and the vulnerability of the physical and anthropogenic environment.

The scientific and technical foundations necessary for reading, interpreting, and drafting geological and technical maps, acquiring structural, stratigraphic, and geomorphological data, interpreting subsurface models, and reading and interpreting geophysical exploratory analyses are also illustrated.

The different methodologies and techniques for investigating, monitoring, assessing, and managing risks and vulnerability of the land and its resources are also illustrated. Finally, knowledge of issues related to seismic and hydrogeological hazards and the associated risks is deepened, as well as those related to past and current climate changes in relation to the physical environment and plant ecosystems.

Ability to apply knowledge and understanding

The goals of the courses in this area are to make students:

- understand the processes and phenomena that contribute to the formation of risks;
- understand the issues related to the assessment and management of natural risks;

- understand experimental methods (geological and environmental parameter surveys, monitoring) for evaluating risk prevention, protection, and mitigation interventions;
- understand predictive methods for studying the interplay between Earth's evolution and human activity.

AREA DEL RISCHIO CHIMICO

Knowledge and understanding

The courses in this area provide the knowledge necessary to assess and manage the chemical risks posed by the human activity to ecosystems and human health, starting with an introduction to the theoretical foundations for assessing exposure and effects. Further in-depth study allows students to understand and apply environmental monitoring methodologies, ecotoxicological tests to assess the effects on organisms in various environmental compartments, and quantitative in silico methods based on structure-activity relationships for modeling chemical, physical, toxicological, and ecotoxicological properties, in order to identify and prevent potential hazards (safe-by-design approach). Models of the environmental fate of contaminants in ecosystems are also illustrated, thus completing a detailed understanding of the issues related to exposure in the workplace and in private life.

Ability to apply knowledge and understanding

The goals of the courses in this area are to make students:

- effectively address issues related to chemical risk assessment and management;
- apply experimental methods (environmental monitoring and ecotoxicological and toxicological testing) to assess exposure and effects;
- use predictive methods to study intrinsic hazard, exposure, and effects;
- assess the environmental hazard of chemicals, identify data needs and knowledge gaps;
- apply and manage the key phases of chemical risk assessment in practice;
- communicate the results of the chemical risk assessment, its conclusions, uncertainties, and limitations.

Laboratory exercises are also included to allow students to apply theoretical concepts and verify their implementation methods and related issues.

AREA OF BIODIVERSITY CONSERVATION AND ENHANCEMENT

Knowledge and understanding

This area will provide graduates with advanced knowledge and understanding of ecosystem and natural environment dynamics, the interactions between biotic and abiotic components, both present and past, as well as anthropogenic disturbances. This training will be complemented by the analysis of the evolution of living communities and their interactions with the environment, and the geological and evolutionary causes of biological crises. The program will provide a solid training in the most modern techniques and

methodologies for investigation and monitoring, as well as data archiving and analysis in the biological, geological, ecological, and chemical disciplines, covering both theoretical and experimental aspects in the laboratory and field. Courses will address applied, management, and evaluation aspects, with an emphasis on the regulatory context. Particular emphasis will also be placed on environmental data simulation and modeling techniques, enabling the preparation of forecasting scenarios for the environment and natural hazards.

Ability to apply knowledge and understanding

Graduates in this area must be able to process and apply their acquired knowledge in an interdisciplinary way to independently develop a professional, critical, and informed approach to environmental monitoring, evaluation, and management issues. They will be able to process collected data, to develop representative models of the measured reality and enable projections of the trend and development of the specific analyzed issues. They must therefore be able to develop understanding skills suitable for developing original ideas both in an applied research context and in independent or subordinate technical and management roles (including at the executive level) in the fields of ecology, geology, the environment, cultural heritage, environmental communication and education, and the diagnosis of biological, geological, and environmental risks. These skills will be assessed through written reports and/or oral exams and/or multimedia presentations.

JOB OPPORTUNITIES

Expert in climate and global change

Career opportunities for this professional figure include both the public and private sectors. In the public sector, the skills may be functional and supportive for ministries (such as the Environment, Health, Cultural Heritage and Activities, Infrastructure, University and Scientific and Technological Research), national and international agencies and organizations (such as the Higher Institute for Environmental Protection and Research, Experimental Stations), as well as for local authorities such as Regions, Municipalities, Mountain Communities, and other public bodies involved in the management of complex environmental situations.

Study and research can continue through PhD programs, and employment opportunities may also be found in scientific research at universities or institutes such as the CNR, ENEA, ENEL, and the CCR.

In the private sector, the developed skills could be applied to companies and businesses producing goods and services, with roles in organization, evaluation, management, and responsibility for all issues that may involve interactions between production activities and environmental systems.

Finally, potential career opportunities also include teaching subjects related to environmental education and natural sciences in schools, once obtained the required qualification.

Expert in geological risk analysis and management

Career opportunities range from working in professional geological studies as a geologist, geological surveyor, geological assistant, or geological technical investigator, or even in public administrations, particularly in Civil Protection roles such as municipalities, regions, fire departments, or the Civil Protection Department, but

also at institutions responsible for risk monitoring and prevention, such as ISPRA, regional governments, and the INGV.

Finally, potential career opportunities also include teaching subjects related to environmental education and the natural sciences in schools, once obtained the required qualification.

Expert in Monitoring, Analysis, and Prevention of Chemical Risk to Ecosystems

This professional profile can operate in both the public and private sectors where expertise in monitoring, analyzing, and preventing chemical risks to ecosystems is relevant: from international agencies (ECHA, EFSA, etc.) and national agencies (ISPRA, the National Institute for Environmental Protection and Research), to regional agencies (ARPA: Regional Agencies for Prevention and Environment), and even public administrations at various levels.

In the private sector, experts can find employment in environmental analysis laboratories, environmental consulting and environmental certification firms, and companies involved in the regulations (REACH, pesticides, biocides, cosmetics, etc.) of the chemical compounds they produce or use.

Finally, potential career opportunities also include teaching subjects related to environmental education and natural sciences in schools, once obtained the required qualification.

Expert in the analysis, monitoring, assessment, prevention, and management of human health risks from chemical, physical, and biological agents.

This professional profile can be found in:

- international (ECHA, EFSA), national (Ministries) and local (Environmental Protection Agencies, National Health Service public bodies, Regions, Provinces, and Municipalities) public supervisory and control institutions;
- public and private companies and business service providers. Coordination and/or participation in health, safety, and environmental protection services (prevention and protection services and HSE);
- environmental management consulting, training, and services: periodic monitoring of emissions and the obtaining and maintenance of Integrated Environmental Authorizations (AIA and AUA). Assessment, monitoring, and protection of health and the environment in the workplace (Legislative Decree 81/08) and in all environmental contexts (Legislative Decree 152/06), and remediation services. Registration, notification, and participation in the preparation of chemical substance dossiers in compliance with European REACH, CLP, and SDS regulations.

Another potential career opportunity is school teaching in subjects related to environmental education and natural sciences, once obtained the required qualification.

Expert in natural resources analysis and management and nature outreach

This professional profile can be found in nature museums, geoparks, theme parks, popular publishing, and in partnerships/freelance work in the field of environmental planning, with a focus on botanical and wildlife aspects. It also offers consultancy and collaboration for public administration bodies (park authorities, regional governments, and provinces).

Finally, potential career opportunities include teaching subjects related to environmental education and natural sciences in schools, once obtained the required qualification.

Art. 4 - Admission to the course

Anyone holding a three-year bachelor's degree, a three-year university diploma, or another suitable qualification obtained abroad may be admitted to the Master's Degree in Environmental Sciences.

In order to obtain the master's degree, the knowledge of the English language at a level corresponding to B2 according to the Common European Framework of Reference for Languages is required (CEFR https://www.coe.int/en/web/common-european-framework-reference-languages/level-descriptions) is needed.

Students wishing to enroll in the Master's Degree in Environmental Sciences must also meet the following curricular requirements:

At least 6 credits in Area 01 - Mathematical and Computer Sciences

At least 6 credits in Area 02 - Physical Sciences

At least 12 credits in Area 03 - Chemical Sciences

At least 18 credits in Area 04 - Earth Sciences

At least 18 credits in Area 05 - Biological Sciences

Initial preparation verification

The evaluation of curricular requirements and personal preparation will be performed by a commission appointed by the Course Council, consisting of at least three professors representing the three academic areas (03 - Chemical Sciences; 04 - Earth Sciences; 05 - Biological Sciences), with an interview to verify the knowledge of the topics specific to the disciplines in the indicated areas.

The admissions process includes the following phases:

1. Evaluation of qualifications by the commission
2. Interview with the commission
3. Possible recovery of educational gaps
4. Enrollment.

Phases 1 and 2: Based on the documents of the candidate and the interview, the Commission will determine the candidates' suitability or the presence of any educational gaps.

Phase 3: If the Commission identifies educational gaps, indicating the cultural areas and the number of credits, candidates must remediate these gaps by enrolling in specific courses (CIRCAF) offered by the degree program. These CIRCAF will be provided free of charge by the University to candidates upon pre-enrollment in the degree program. Each candidate with documented educational gaps may complete his/her enrollment only after obtaining the certification of the CIRCAF from the professors responsible for the various areas.

Phase 4: Enrollment.

Regarding the acquisition of a B2 level, students who do not have the appropriate certification can attend a

dedicated course (MEC McMillan English Campus). This course does not provide a B2 level certification, but serves only to address any gaps in the student's English proficiency upon entry.

Admission with educational gaps is not possible.

Art. 5 - Education Path

The program consists of four curricula, each requiring elective courses from among the core courses (TAF B), based on the thematic areas and the chosen curriculum, and from among related and complementary courses (TAF C) to complete the curriculum:

Climate And Global Change

Geological Risk

Chemical Risk

Conservation and Enhancement of Biodiversity

For each curriculum, the student must include in the study plan a number of mandatory exams (TAF B, characterizing), by thematic area according to the following scheme.

Curriculum	**Chemistry area**	**Biologic area**	**Ecology area**	**Geology area**	**Agricultural area**	**Legal area**
Climate And Global Change	1	2	1	2	1	1
Geological Risk	1	1	1	2	1	1
Chemical Risk	2	1	2	1	1	1
Conservation and Enhancement of Biodiversity	1	2	1	2	1	1

As far the related/complementary courses (TAF C) are concerned, the student may choose from those listed, while for the elective activities (TAF D) the student may choose two other courses from the characterizing (TAF B) or related/complementary (TAF C) courses not previously chosen or other courses at the University, provided they are compatible with the study path, according to the indications of the specific Commission within the CCS.

The teaching method is conventional with the aid of videoconferencing in Como and Varese: lectures are held simultaneously in Como and Varese, allowing students to choose their preferred location, with the instructor present at either location.

The degree program requires mandatory attendance only for laboratory courses, exercises (if indicated as mandatory) and field trips (fieldwork labs). Attendance is required for at least 75% of the scheduled activities. Courses requiring mandatory attendance must be taken in the relevant year. Exceptions may be granted,

particularly in the case of internal transfers or transfers from another university. Working students may benefit from preferential options for the selection of the shifts, but must still comply with the attendance requirement indicated above.

Working Students: The "Working Student" status allows for an exemption from mandatory lectures or exercises, but not from attendance at educational workshops, including fieldwork, for which the student must comply with the attendance requirements set forth in this document. The working student will agree with the instructor on the best conditions for attendance, shifts, schedules, and any rescheduling of exercises. The "Working Student" status is granted to students who submit a formal employment contract, which, if fixed-term, may expire within the time limits of the semesters or years.

Mothers with children under 3 years of age: the same conditions as for "working students" apply.

Students with disabilities: the Course Council complies with and respects the provisions of the relevant Office, applying the compensatory measures required for assessment tests and/or the possible provision of a tutor for laboratory and field activities.

CFU/hours correspondance for each type of activity

University Educational Credits (CFU) are a measurement of the amount of learning, including individual study, required to a student with an adequate initial preparation to acquire knowledge and skills in the educational activities required by the degree program.

Any educational activity (teaching, laboratory, internship, thesis, etc.) within the degree program corresponds to a specific number of educational credits (CFU).

Each CFU corresponds to 25 hours of commitment, given by the hours of lectures and laboratory and the ones of independent study necessary to complete the student's preparation.

The CFU number corresponding to each educational activity is acquired by the student upon passing the exam or any other form of assessment defined in the degree program rules.

Educational Activities / CFU:

- lecture: 8 hours / CFU;
- exercise: 12 hours / CFU;
- theoretical laboratories (LAB-T): 16 hours / CFU;
- practical laboratories (LAB-P): 16 hours / CFU;
- field laboratories (LAB-C): 16 hours / CFU;
- seminars: 12 hours / CFU;
- internship: 25 hours / CFU.

Lectures: This is the main and fundamental teaching activity; students attend lectures and independently process the content they have listened to.

Exercises: This activity allows to understand completely the content of lectures through the development of applications. No additional content is added to the lectures. Typically, exercises are associated with lectures

and do not exist independently. In "passive" exercises, the application development is performed by the instructor; in active exercises, students develop applications under the instructor's supervision.

Theoretical Teaching Laboratory (LAB-T): This activity involves the development and further development of applications, numerical examples, and functional examples related to science in the laboratories. LAB-T also involves the theoretical design of a teaching laboratory exercise, including ex-situ evaluations for planning fieldwork, monitoring, and analysis.

Practical Teaching Laboratory (LAB-P): This is a supervised activity that involves student interaction with instruments, equipment, or application software packages.

Field Teaching Laboratory (LAB-C): This activity involves the field application of theoretical and practical knowledge acquired during lectures, which is explained in theoretical form in exercises and in practical form in teaching laboratories. Field laboratories are also offered in a multidisciplinary format to enable the development of the environmental analysis skills outlined in the course goals.

Seminars: This activity explores a specific topic within a specific course.

Internship/Thesis: This activity allows students to concretely apply and deepen the knowledge and skills acquired during their studies. The internship consists of practical field or laboratory work, accompanied by individual and collaborative research, under the guidance of their university supervisor, aimed at writing the thesis.

Assessment Methods for Educational Activities

The assessment and evaluation methods are detailed in the course syllabi.

For the courses of the Degree Program, the following methods of assessment may be used: written exam, oral exam.

In order to access the assessment tests for courses that include laboratory activities, laboratory attendance is verified, according to the methods indicated in the specific syllabus.

Possible Prerequisites and/or Exclusions

There are no prerequisites.

Art. 6 - Rules for submitting study plans

Students must submit their Study Plan in their first year according to the deadlines set annually and reported on the Student Administration web pages: https://www.uninsubria.it/servizi/presentazione-piano-di-studio

Students have to compile their study plan online by accessing their ESSE3 reserved area and must indicate:

- the courses that have to be chosen from dedicated lists
- the related/supplementary courses (TAF C) according to the chosen curriculum;
- the elective courses (TAF D), which are worth 12 credits.

To facilitate the choice, the Degree Program Council lists in the online study plan submission procedure some recommended courses (TAF D) consistent with the study program.

Student Elective Courses (letter D)

Within the "Student Elective Courses" category, students may choose from courses offered in the Degree Program, either "characterizing" or "related/complementary" (if not already selected), or from other Degree Programs offered by the Department or the University, provided they are consistent with their educational path and subject to review by the Student Career Committee and approval by the Degree Program Council. In this case, the study plan must be submitted in paper format by requesting the form to the Student Secretariat via INFOSTUDENTI.

Courses offered by limited access University degree programs cannot be chosen.

Further language skills, IT and interpersonal skills, internships and other (letter F)

As part of the "Further linguistic knowledge, IT and interpersonal skills, internships and other" curriculum, the degree course offers theoretical/practical teaching in Mountain Safety (2 credits), in compliance with the current legislation.

The student can change the study plan in the following years, if regularly enrolled.

Art. 7 - Opportunities offered during the training path

The program promotes several initiatives that complement and enrich the academic experience. In particular, it is possible to participate in mobility and internationalization programs:

- **Mobility abroad – Erasmus and other opportunities**
  https://www.uninsubria.it/internazionale/mobilita-allestero/programma-erasmus
- **Tutoring service** (https://www.uninsubria.it/servizi/tutti-i-servizi/tutorato)
  The program annually identifies discipline tutors, i.e., teachers that can be contacted by students on topics regarding international mobility, the compilation of the study plan, career guidance etc.

Contacting the "Diritto allo Studio" office, it is possible to apply for student collaborations: https://www.uninsubria.it/servizi/tutti-i-servizi/collaborazioni-studentesche-200-ore

The Degree Program, in collaboration with University offices, supports students in organizing internships. Curricular internships are included in the study plans and take place during the course, also to complete the degree thesis. They are designed to enhance the student's learning and development process by creating opportunities for alternating study and work. Their duration is governed by university regulations, in compliance with applicable national legislation. The Didactic Secretariat takes care of all the administrative procedures, including the stipulation of individual agreements with companies/public bodies and training project.

Curricular internships provide the recognition of educational credits, which are required for the degree; for this reason, each internship offer will be evaluated by the relevant academic body based on the following aspects: consistency with the student's educational path, validity of the proposal, consistency of duration (number of months and number of hours) with the number of credits required for curricular internships in the specific program.

Art. 8 - Graduation

The final exam will consist of a discussion, before the Degree Committee, of an experimental thesis reporting the results of original research on topics consistent with the educational goals of the Master's Degree in Environmental Sciences. In this discussion, the student must demonstrate the knowledge acquired and the ability to structure and present the thesis experimental results.

The thesis is performed under the supervision of one or more supervisors (a supervisor from within the University and possibly one or more co-supervisors), and can be performed either at a scientific facility within the University of Insubria or at another facility affiliated with the Degree Program in Italy or abroad, operating in the disciplines of the Master's Degree in Environmental Sciences (public or private entities, companies operating in the environmental sector, chemical and manufacturing industries and plants, etc.).

The final thesis must be written according to the standards accepted by the international scientific community: description of the state of the art of the topic, the purposes of the research and the used methodologies, presentation, discussion and interpretation of the results obtained and cited bibliography.

The final exam will consist of a discussion of the thesis before the Degree Committee, in which the student must demonstrate the acquired knowledge and the ability to structure and present the experimental results of the thesis. The Degree Committee is normally composed of no less than five members, with a majority of its members being professors and researchers teaching in the relevant and associated Departments.

For each candidate, the final exam presentation must last at least 13-15 minutes, plus the time for the discussion; 3 credits are awarded for this presentation. Following the presentation, the final degree grade, expressed out of 110, with possible honors, will be awarded based on the student's overall preparation, as demonstrated by the exams results and the maturity demonstrated in the final exam.

The final grade will be determined using the weighted average (based on 110) of the grades obtained in the exams taken by the candidate prior to the final exam, as provided by the Secretariat. Any increase in grades by the Degree Committee will be assessed based on the following:

- The total points available for the defense of the master's thesis are generally 10.
- The supervisor is allocated 5 points; the committee reserves the right to attribute an additional 5 points for the logical quality, content of the presentation, and the discussion.

The supervisor expresses his or her evaluation first, giving an assessment of the student's quality, with the following ratio:

5 points = excellent

4 points = good

3 points = fair

2 points = sufficient

1 point = poor

In addition to the above assessment, honors earned by the candidate in the exams will be awarded 0.3 points, up to a maximum of 1 additional point. Finally, 1 additional point will be awarded (for each of the following items) to candidates:

- who graduate on time, i.e., who have completed their studies within the legal duration of the degree

program;

- candidates who have participated in the Erasmus programs;
- candidates who write their thesis in English.

The Chair of the Examination Committee reserves the right to recommend honors and, in exceptional cases, publication honors if the candidate's overall score exceeds 110 points, including fractions, and one or more honors have been obtained in the exams.

The final exam is worth 34 credits.

Upon graduation, a **Diploma Supplement** is issued. The Diploma Supplement is an informative report accompanying the official qualification awarded at the end of the study program. It describes the nature, level, context, content, and status of the studies undertaken and completed by the student. It is issued in both Italian and English. The purpose of the document is to provide independent data for the international transparency of qualifications (diplomas, degrees, certificates, etc.) and to enable equitable academic and professional recognition, promoting student mobility. The Diploma Supplement complies with the Europass standard.

Appendix 1 – Study plan

CLIMATE AND GLOBAL CHANGE CURRICULUM

COMPULSORY COURSES					
CFU	**VERIFICATION METHOD**	**NAME**	**TAF**	**AREA**	**SECTOR**
YEAR I					
6	V	ELECTIVE COURSE	D		
YEAR II					
6	V	ELECTIVE COURSE	D		
34	V	INTERNSHIP AND FINAL EXAM			

CHARACTERIZING COURSES (* held in English)							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
CHEMISTRY AREA - ONE COURSE AMONG:							
1	II	ELEMENTS OF MULTIVARIATE ANALYSIS AND MODELING FOR CHEMISTRY AND THE ENVIRONMENT	B	6	V	CHEMISTRY	CHIM/12
1	I	ATMOSPHERIC ANALYTICAL CHEMISTRY	B	6	V	CHEMISTRY	CHIM/01
BIOLOGY AREA: 2 COURSES							
1	II	PLANT BIODIVERSITY AND CLIMATE CHANGE	B	6	V	BIOLOGY	BIO/02
1	II	ADAPTATION AND MITIGATION TO CLIMATE CHANGE*	B	6	V	BIOLOGY	BIO/02
ECOLOGY AREA - ONE COURSE AMONG:							
1	I	AQUATIC ECOSYSTEMS AND WATER GRABBING	B	6	V	ECOLOGY	BIO/07
1	II	ECOLOGY OF POPULATIONS AND COMMUNITIES	B	6	V	ECOLOGY	BIO/07
GEOLOGY AREA: 2 COURSES AMONG:							
1	I	PALEOECOLOGY	B	6	V	GEOLOGY	GEO/01
1	II	CLIMATE CHANGE	B	6	V	GEOLOGY	GEO/04
2	I	PALEOCLIMATE RECONSTRUCTIONS*	B	6	V	GEOLOGY	GEO/04
AGRICULTURAL ETC AREA: 1 COURSE							
1	II	APPLIED ENVIRONMENTAL MICROBIOLOGY	B	6	V	AGRICULTURAL TECHNICAL AND MANAGEMENT	AGR/16

LEGAL AREA: 1 COURSE OF 2 6 CFU MODULES:							
1 1	I I	ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY WITH ELEMENTS OF ENVIRONMENTAL LAW	C B	6 6	V V	LEGAL, ECONOMIC AND EVALUATION	MED /44 IUS/10

RELATED/COMPLEMENTARY (TAF C) (* held in English)							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	ANALYTICAL METHODS FOR ENVIRONMENTAL MONITORING*	C	6	V	CHEMISTRY	CHIM/01
1	I	WILDLIFE CONSERVATION AND MANAGEMENT	C	6	V	BIOLOGY	BIO/05
1	II	APPLIED PLANT ECOLOGY	C	6	V	ECOLOGY	BIO/03
2	II	STRESS ECOLOGY*	C	6	V	ECOLOGY	BIO/07
1	II	APPLIED GEOMORPHOLOGY	C	6	V	GEOLOGY	GEO/04
1	I	REMOTE SENSING FOR GEOSCIENCES AND GIS*	C	6	V	GEOLOGY	GEO/03
2	II	GLOBAL CHANGES AND HEALTH*	C	6	C		MED/44

G – JUDGEMENT V – EXAM I – SUITABILITY F – ATTENDANCE

Students may choose three courses from those listed as "Related/complementary" (TAF C).

In addition, for Elective Activities (TAF D), students may choose two additional courses from core courses not previously chosen (TAF B), from related/complementary courses (TAF C), or from any other course offered by the University.

OTHER COMPULSORY COURSES							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	MOUNTAIN SAFETY COURSE – SIM	F	2	I	NN	NN

GEOLOGICAL RISK CURRICULUM

COMPULSORY COURSES					
CFU	VERIFICATION METHOD	NAME	TAF	AREA	SECTOR
YEAR I					
6	V	ELECTIVE COURSE	D		
YEAR II					
6	V	ELECTIVE COURSE	D		
34	V	INTERNSHIP AND FINAL EXAM			

CHARACTERIZING COURSES (* held in English)							
YEAR	SEM	NAME	TAF	CFU	VERIFICATION METHOD	AREA	SSD
CHEMISTRY AREA - 1 COURSE AMONG:							
1	II	ANALYTICAL METHODS FOR ENVIRONMENTAL MONITORING*	B	6	V	CHEMISTRY	CHIM/01
1	I	ATMOSPHERIC ANALYTICAL CHEMISTRY	B	6	V	CHEMISTRY	CHIM/01
1	II	ELEMENTS OF MULTIVARIATE ANALYSIS AND MODELING FOR CHEMISTRY AND THE ENVIRONMENT	B	6	V	CHEMISTRY	CHIM/12
BIOLOGY AREA - 1 COURSE							
1	II	PLANT BIODIVERSITY AND CLIMATE CHANGE	B	6	V	BIOLOGY	BIO/02
ECOLOGY AREA - 1 COURSE AMONG:							
1	II	APPLIED PLANT ECOLOGY	B	6	V	ECOLOGY	BIO/03
1	I	AQUATIC ECOSYSTEMS AND WATER GRABBING	B	6	V	ECOLOGY	BIO/07
GEOLOGY AREA - 2 COURSES							
1	II	CLIMATE CHANGE	B	6	V	GEOLOGY	GEO/04
1	I	REMOTE SENSING FOR GEOSCIENCES AND GIS*	B	6	V	GEOLOGY	GEO/03
AGRICULTURAL ETC AREA: 1 COURSE							
1	II	APPLIED ENVIRONMENTAL MICROBIOLOGY	B	6	V	AGRICULTURAL TECHNICAL AND MANAGEMENT	AGR/16
LEGAL AREA: 1 COURSE OF 2 6 CFU MODULES:							
1 1	I 1	ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY WITH ELEMENTS OF ENVIRONMENTAL LAW	C B	6 6	V V	LEGAL, ECONOMIC AND EVALUATION	MED/44 IUS/10

To achieve 48 CFU, the student must select additional 6 CFU course chosen from the Biology, Chemistry, or Ecology areas.

RELATED/COMPLEMENTARY (TAF C) (* held in English)							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	ADAPTATION AND MITIGATION TO CLIMATE CHANGE*	C	6	V	BIOLOGY	BIO/02
2	I	PALEOCLIMATE RECONSTRUCTIONS*	C	6	V	GEOLOGY	GEO/04
1	II	APPLIED GEOMORPHOLOGY	C	6	V	GEOLOGY	GEO/04
1	II	GEORESOURCES	C	6	V	GEOLOGY	GEO/03
2	II	EARTHQUAKE GEOLOGY, NATURAL RISK MITIGATION, AND THE ROLE OF CIVIL PROTECTION (BORROWED FROM IASAL)	C	6	V	GEOLOGY	GEO/03
2	II	ECOLOGY OF SUSTAINABILITY (Borrowed from Engineering)	C	6	V	ECOLOGY	BIO/07

G – JUDGEMENT V – EXAM I – SUITABILITY F – ATTENDANCE

Students may choose three courses from those listed as "Related/complementary" (TAF C).

In addition, for Elective Activities (TAF D), students may choose two additional courses from core courses not previously chosen (TAF B), from related/complementary courses (TAF C), or from any other course offered by the University.

OTHER COMPULSORY COURSES							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	MOUNTAIN SAFETY COURSE – SIM	F	2	I	NN	NN

CURRICULUM RISCHIO CHIMICO

COMPULSORY COURSES					
CFU	VERIFICATION METHOD	NAME	TAF	AREA	SECTOR
YEAR I					
6	V	ELECTIVE COURSE	D		
YEAR II					
6	V	ELECTIVE COURSE	D		
34	V	INTERNSHIP AND FINAL EXAM			

CHARACTERIZING COURSES (* held in English)							
YEAR	SEM	NAME	TAF	CFU	VERIFICATION METHOD	AREA	SSD
CHEMISTRY AREA - 2 COURSES AMONG:							
1	I	ATMOSPHERIC ANALYTICAL CHEMISTRY	B	6	V	CHEMISTRY	CHIM /01
1	II	ELEMENTS OF MULTIVARIATE ANALYSIS AND MODELING FOR CHEMISTRY AND THE ENVIRONMENT	B	6	V	CHEMISTRY	CHIM /12
2	I	INDUSTRIAL CHEMISTRY FOR THE ENVIRONMENT	B	6	V	CHEMISTRY	CHIM /04
BIOLOGY AREA - 1 COURSE							
1	I	BIOCHEMISTRY*	B	6	V	BIOLOGY	BIO/ 10
ECOLOGY AREA - 2 COURSES AMONG:							
1	II	ENVIRONMENTAL RISK ASSESSMENT	B	6	V	ECOLOGY	BIO/ 07
1	I	ECOTOXICOLOGICAL TESTS	B	6	V	ECOLOGY	BIO/ 07
1	II	ENVIRONMENTAL FATE MODELLING OF CONTAMINANTS*	B	6	V	ECOLOGY	BIO/ 07
GEOLOGY AREA - 1 COURSE AMONG:							
1	II	APPLIED GEOMORPHOLOGY	B	6	V	GEOLOGY	GEO /04
1	II	GEORESOURCES	B	6	V	GEOLOGY	GEO /03
AGRICULTURAL AREA - 1 COURSE							
1	II	APPLIED ENVIRONMENTAL MICROBIOLOGY	B	6	V	AGRICULTURAL TECHNICAL AND MANAGEMENT	AGR/ 16
LEGAL AREA: 1 COURSE OF 2 6 CFU MODULES:							
1 1	I I	ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY WITH ELEMENTS OF ENVIRONMENTAL LAW	C B	6 6	V V	LEGAL, ECONOMIC AND EVALUATION	MED /44 IUS/10

RELATED/COMPLEMENTARY (TAF C) (* held in English)							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	ANALYTICAL METHODS FOR ENVIRONMENTAL MONITORING*	C	6	V	CHEMISTRY	CHIM/01
2	I	BIOCHEMICAL METHODS FOR THE ENVIRONMENT*	C	6	V	BIOLOGY	BIO/10
1	II	APPLIED ENVIRONMENTAL AND OCCUPATIONAL HYGIENE	C	6	V		MED/44
1	II	APPLIED ENVIRONMENTAL AND OCCUPATIONAL HYGIENE LABORATORY	C	6	V		MED/44
2	II	GLOBAL CHANGES AND HEALTH*	C	6	V		MED/44
1	I	AQUATIC ECOSYSTEMS AND WATER GRABBING	C	6	V	ECOLOGY	BIO/07
2	II	STRESS ECOLOGY*	C	6	V	ECOLOGY	BIO/07
1	I	REMOTE SENSING FOR GEOSCIENCES AND GIS*	C	6	V	GEOLOGY	GEO/03
2	II	*ECOLOGY OF SUSTAINABILITY (Borrowed from Engineering)*	C	6	V	ECOLOGY	BIO/07

G – JUDGEMENT V – EXAM I – SUITABILITY F – ATTENDANCE

Students may choose three courses from those listed as "Related/complementary" (TAF C).

In addition, for Elective Activities (TAF D), students may choose two additional courses from core courses not previously chosen (TAF B), from related/complementary courses (TAF C), or from any other course offered by the University.

OTHER COMPULSORY COURSES							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	MOUNTAIN SAFETY COURSE – SIM	F	2	I	NN	NN

CONSERVATION AND ENHANCEMENT OF BIODIVERSITY CURRICULUM

COMPULSORY COURSES					
CFU	VERIFICATION METHOD	NAME	TAF	AREA	SECTOR
YEAR I					
6	V	ELECTIVE COURSE	D		
YEAR II					
6	V	ELECTIVE COURSE	D		
34	V	INTERNSHIP AND FINAL EXAM			

CHARACTERIZING COURSES (* held in English)							
YEAR	SEM	NAME	TAF	CFU	VERIFICATION METHOD	AREA	SSD
CHEMISTRY AREA - 1 COURSE AMONG:							
1	II	ANALYTICAL METHODS FOR ENVIRONMENTAL MONITORING*	B	6	V	CHEMISTRY	CHIM /01
1	II	ELEMENTS OF MULTIVARIATE ANALYSIS AND MODELING FOR CHEMISTRY AND THE ENVIRONMENT	B	6	V	CHEMISTRY	CHIM /12
BIOLOGY AREA - 2 COURSES							
1	I	WILDLIFE CONSERVATION AND MANAGEMENT	B	6	V	BIOLOGY	BIO/ 05
1	II	NETWORK SITE MANAGEMENT NATURA 2000	B	6	V	BIOLOGY	BIO/ 05
ECOLOGY AREA - 1 COURSE AMONG:							
1	II	APPLIED PLANT ECOLOGY	B	6	V	ECOLOGY	BIO/ 03
1	II	ECOLOGY OF POPULATIONS AND COMMUNITIES	B	6	V	ECOLOGY	BIO/ 07
GEOLOGY AREA - 2 COURSES							
1	I	PALEOECOLOGY	B	6	V	GEOLOGY	GEO /01
1	I	REMOTE SENSING FOR GEOSCIENCES AND GIS*	B	6	V	GEOLOGY	GEO /03
AGRICULTURAL AREA - 1 COURSE							
1	II	APPLIED ENVIRONMENTAL MICROBIOLOGY	B	6	V	AGRICULTURAL TECHNICAL AND MANAGEMENT	AGR/ 16
LEGAL AREA: 1 COURSE OF 2 6 CFU MODULES:							
1 1	I I	ENVIRONMENTAL AND OCCUPATIONAL TOXICOLOGY WITH ELEMENTS OF ENVIRONMENTAL LAW	C B	6 6	V V	LEGAL, ECONOMIC AND EVALUATION	MED /44 IUS/10

RELATED/COMPLEMENTARY (TAF C) (* held in English)							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	PLANT BIODIVERSITY AND CLIMATE CHANGE	C	6	V	BIOLOGY	BIO/02
1	II	ADAPTATION AND MITIGATION TO CLIMATE CHANGE*	C	6	V	BIOLOGY	BIO/02
2	II	BIOMETRICS APPLICATIONS	C	6	V	BIOLOGY	BIO/05
2	II	VEGETATION SCIENCE AND MONITORING HABITAT NATURA 2000	C	6	V	ECOLOGY	BIO/03
1	I	AQUATIC ECOSYSTEMS AND WATER GRABBING	C	6	V	ECOLOGY	BIO/07
2	I	PALEOCLIMATE RECONSTRUCTIONS*	C	6	V	GEOLOGY	GEO/04
2	II	GLOBAL CHANGES AND HEALTH*	C	6	V		MED/44

G – JUDGEMENT V – EXAM I – SUITABILITY F – ATTENDANCE

Students may choose three courses from those listed as "Related/complementary" (TAF C).

In addition, for Elective Activities (TAF D), students may choose two additional courses from core courses not previously chosen (TAF B), from related/complementary courses (TAF C), or from any other course offered by the University.

OTHER COMPULSORY COURSES							
YEAR	**SEM**	**NAME**	**TAF**	**CFU**	**VERIFICATION METHOD**	**AREA**	**SSD**
1	II	MOUNTAIN SAFETY COURSE – SIM	F	2	I	NN	NN