**UNIVERSITA' DEGLI STUDI DI MILANO**

**PROGRAMME DESCRIPTION - ACADEMIC YEAR 2024/25**

**MASTER DEGREE**

Cultural heritage conservation science (Class LM-11)

Enrolled from 2015/16 academic year

### HEADING

**Degree classification - Denomination and code:** LM-11 Conservation and restoration of cultural heritage

**Degree title:** Dottore Magistrale

**Length of course:** 2 years

**Credits required for admission:** 180

**Total number of credits required to complete programme:** 120

**Years of course currently available:** 1st, 2nd

**Access procedures:** Open, subject to entry requirements

**Course code:** F8Y

### PERSONS/ROLES

**Head of Study Programme**

Prof. Marco Merlini

**Degree Course Coordinator**

Prof. Marco Merlini

**Tutors - Faculty**

- Tutor per l'orientamento - prof. Mattia Marini, prof. Giulio Borghini, prof. ssa Flavia Groppi
- Tutor per la mobilità internazionale e l'Erasmus - prof. ssa Nicoletta Marinoni
- Prof.ssa Silvia Bruni - percorso per Esperti di diagnostica e tecnologia applicata ai beni culturali storico-artistici
- Prof. Andrea Zerboni - percorso per Esperti di diagnostica e tecnologia applicata ai beni culturali archeologici
- Dott. Leonardo Gariboldi - percorso per Esperti di conservazione applicata ai beni culturali museali
- Prof. Alessandro Rizzi - percorso per Esperti di diagnostica e tecnologia applicata ai supporti dell’informazione.
- Tutor per stage e tirocini - prof.ssa Elisabetta Onelli
- Tutor per laboratori e altra attività - prof.ssa Elisabetta Onelli
- Tutor per tesi di Laurea - prof.ssa Elisabetta Onelli
- Tutor per trasferimenti - prof. Marco Merlini
- Tutor per ammissioni Lauree Magistrali - prof. Luca Trombino
- Tutor per riconoscimento crediti - prof. Marco Merlini

**Degree Course website**

https://conservazionebeniculturali-lm.cdl.unimi.it/it

Via Botticelli, 23 - II piano Quando disponibile o su appuntamento

Email: marco.merlini@unimi.it

**Course management**


**Libraries**

https://www.unimi.it/it/studiare/biblioteche

**Student registrar**

Via Celoria, 18 - 20133 Milano 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 master degree in 'Cultural Heritage Conservation Science' is aimed at students who want to extend and deepen the skills acquired in previous degree courses to enter in the world of research or profession in the field of conservation science of cultural heritage.
In this light, the master degree aims to transmit an in-depth knowledge of the methods and technologies that the mathematical, physical and natural sciences make available today for the preservation of cultural heritage; moreover, it aims to provide the scientific skills allowing further development in these research fields. It aims to train future Conservation Scientists, i.e. experts in science and technology applied to cultural heritage with a high interdisciplinary educational background. Since there are many types of cultural heritage, it is appropriate to specify that the course will focus on the historical-artistic, archaeological, architectural, on museums and on information storage media, because they are the ones deeply rooted in the cultural tradition of the proposers and, in view of the future professional opportunities for graduates, the most relevant for the research field and the employment market. Therefore, the master degree will prepare professional profiles of: 1 - experts in diagnostics and application technology to historical and artistic cultural heritage, with particular reference to wall and on wooden paintings and textile supports; 2 - experts in diagnostics and technology applied to archaeological cultural heritage (geoaethnologists and archaeometres); 3 - conservation experts applied to museum cultural heritage; 4 - experts in diagnostics and technology applied to information storage media.

In addition to theoretical courses, numerous laboratories are provided to support the notions with the necessary applications, in order to make the interface with the research and professional worlds stricter. The training offer proposed is composed of courses for each area envisaged by the ministerial educational system (Conservation Sciences and Technologies, Earth and Nature Sciences, Interdisciplinary Training), corroborated by supplementary courses, as well as by the internships and the final dissertation. Through this offer the students will be oriented and guided to finalize their training to achieve one of the proposed professional profiles.

The master degree aims to transmit the wide range of knowledge necessary to operate at the level of excellence in the field of cultural heritage diagnostics and conservation, taking as a cultural reference the interdisciplinary nature of the professions of the research field.

In particular, the master graduated will acquire in-depth theoretical, methodological and experimental skills in the Conservation Sciences applied to Cultural Heritage, in order to identify new theoretical developments and to operate at decision-making level in all areas of the sciences applied to Cultural Heritage.

Going into detail, the master graduated must have:
- mastership of the scientific investigation method and of diagnostic techniques aimed at identifying and designing the most suitable procedures for the recovery and conservation of cultural heritage even in complex realities, in territorial protection initiatives that include cultural heritage, in protection and development of conservation areas, in support of restoration and reconnaissances of the historical-artistic, monumental and archaeological heritage, and of preventive archeology activities;
- in-depth knowledge of modern analysis and detection instruments, statistical and analysis and data storage IT techniques, relating to each of the above described types of cultural heritage;
- updated scientific and operational preparation in the disciplines characterizing the master and advanced scientific knowledge on: a) characteristics, properties and degradation processes of the materials that constitute the historical and artistic cultural heritage; b) archeometric and geoaethnological applications in the various fields of interest; c) problems of the conservation of museum cultural heritage; d) characteristics and problems of conservation and in the diagnosis of information storage media;
- ability to organize the interactions of the different disciplinary knowledge, in order to face the complex scientific problems related to the preventive conservation and to the operations connected to it, in the various classes of cultural heritage;
- ability to identify strategies and tactics to plan and carry out interventions in the various fields of conservation of cultural heritage, in particular in the historical-artistic, architectural, archaeological, museum, and information storage media, and to integrate with other professional figures operating in the same fields.

The graduates in the master's degree will be able to carry out the activity of experts in diagnostics and technology applied to cultural heritage, as required by the recent Madia law (110/2014), and more specifically:
- take care of the direction and design of diagnostic interventions, with particular attention to the identification of methods, materials, measures and techniques for the recovery, conservation and restoration of historical, artistic, archaeological, museum and cultural media;
- deal with the design of diagnostic protocols for the conservation of each of the above described types of cultural heritage, also in relation to the reference procedures and good practices in use;
- contribute to the design and organization of museums, archaeological parks, exhibitions, and cultural events;
- collaborate in the design and implementation of information systems for the processing of data relating to cultural heritage. Moreover, they will be prepared to conduct:
- planning and organization of laboratories and sites aimed at conservation of each of the above described types of cultural heritage;
- management, collaboration and consultancy activities for the design of scientific, archaeological and historical-artistic museums;
- didactic activity at various levels in the school;
- advertising and publishing activities.

The acquisition of university credits (CFU) is possible through: lectures, exercises, laboratories, seminars, practical activities on the field, archaeological excavations, laboratories and museums, free courses, degree theses carried out in university structures and/or at qualified organizations or museums.

In accordance with the aims of the master course, the didactical program includes disciplines specifically dedicated to teaching mediation and communication and business economics.

Expected learning outcomes

KNOWLEDGE AND UNDERSTANDING
- In-depth knowledge and understanding of the disciplines characterizing the class, in particular, those relating to scientific techniques applied to the diagnosis and conservation of historical-artistic, architectural, archaeological, museum and cultural media and information storage media;
- knowledge and understanding of the techniques and good practices for diagnostics and conservation of the categories of cultural heritage above mentioned;
- understanding of the interdisciplinary aspects of problems related to diagnostics and conservation of cultural heritage.

The knowledge and comprehension skills listed above are achieved through participation in lectures, exercises and personal study, provided by the training activities activated within the disciplinary areas of Biology, Chemistry, Physics, Computer Science, and Earth Sciences.

The acquisition of knowledge and comprehension skills will be verified through judgments based on the evaluation of the activities carried out by the individual student during the teaching period (elaborates and short essays, solutions of problems and exercises, oral presentations during lessons and exercises, etc.) and a final exam in written and/or oral form.

APPLYING KNOWLEDGE AND UNDERSTANDING
- Ability to autonomously use the main experimental methods of diagnostics applied to the conservation of cultural heritage and to operate with management and coordination roles, in diagnostic laboratories, in archaeological excavation sites, in restoration sites and laboratories and in museums;
- ability to organize and frame complex problems and information in an appropriate and coherent way.

The achievement of the ability to apply the knowledge listed above will take place through participation in lessons, individual study and through the practical exercises in laboratory and field activities. In this context, courses with laboratory exercises and field experience are particularly important.

To verify the above mentioned skills, written and/or oral exams are provided, as well as practical tests in which the student is called to demonstrate mastery of tools and methodologies. The ability to apply the acquired knowledge is also verified through other practical activities, such as participation in archaeological excavations and restoration sites.

MAKING JUDGEMENTS
- Ability to choose methods and techniques on the basis of both the reference manuals and the most advanced good practices to be applied to specific types of cultural heritage;
- ability to evaluate the legal implications of the planning and execution of conservation and diagnostic operations applied to cultural heritage;
- knowledge of modern detection, management and data processing instruments.

The autonomy in making judgments and the ability to plan and conduct interventions are mainly developed during the study groups, seminars, reports preparation.

The acquisition of independent judgment is verified through critical discussion during the examinations, but also by assessing the ability to work in group during the graduation thesis.

COMMUNICATION SKILLS
- Ability to communicate in oral and in written form to the officers responsible for the protection of cultural heritage, to the public and private agencies dealing with it, and to both an expert public and a non-specialist public; in all the above circumstances the communication must show the appropriate language and register;
- ability to use the tools of the new communication technologies;
- in-depth knowledge of a second European language, in addition to the mother tongue, in the specific area of competence and for the exchange of general information, with particular reference to the specific lexicons of diagnostics and conservation of cultural heritage.

Written and oral communication skills are developed particularly during seminars, study groups, stages and trainings and other activities requiring the preparation of reports or documents and their presentation, also using multimedia tools.

The evidence of the communication skills acquisition is entrusted to the drafting and discussion of the graduation thesis.

LEARNING SKILLS
- Knowledge of scientific updating tools and ability to access scientific literature produced in, at least, one European language in addition to the mother tongue;
- good knowledge and understanding, in an interdisciplinary perspective, of the disciplines of the sciences applied to the conservation and diagnostics of cultural heritage; ability to evaluate the different approaches and to to use them in new areas of interest;
- ability to develop suitable skills for research, acquired through the training activities of the internship and the elaboration of the graduation thesis;
- ability to use the new communication technologies tools (e.g. e-learning platforms.).

The learning skills are achieved through the entire master degree path, in particular during in the preparation of the graduation thesis; they are assessed in this context, as well as in all the activities requiring the presentation of independently collected data.

Professional profile and employment opportunities
1 - Experts in diagnostics and technology applied to historical-artistic cultural heritage

Work Context
The master graduated in Cultural Heritage Conservation Science carries out functions of high responsibility in the areas of
the conservation of historical-artistic heritage, both in terms of diagnostics (in support of restoration) and of protection and development:
- carrying out research activities in public and private institutes responsible for the conservation of cultural heritage (museums, art galleries, galleries, private collections);
- coordinating activities related to the scientific knowledge of cultural heritage performed by experts from different sectors, in the context of conservation / restoration campaigns;
- carrying out freelance activities the conservation of movable property belonging to public institutions and private collections;
- carrying out dissemination activities in the field of sciences applied to diagnostics and conservation of historical and artistic heritage;
- collaborating in the creation of scientific apparatus for temporary exhibitions and displays;
- examining and harmonizing the analytical results of specific diagnostic campaigns, on behalf of public and private institutions involved in the conservation of the historical and artistic heritage.

Skills Associated to the Role
The master graduated in Cultural Heritage Conservation Science has specific knowledge of the most modern applications of the biological, chemical, physical, geological and IT sciences used in the field of the conservation of historical-artistic heritage, in different contexts related to specific environmental or provenance conditions. He is aware of the ethical and legislative aspects of the restoration of the artworks of public and private institutions.

Career Opportunities
- universities and public research agencies;
- public and private biological, chemical, physical, geological and IT analysis laboratories;
- superintendences, museums, and art galleries;
- private museums;
- scientific journalism, specifically linked to the dissemination of scientific analyzes related to the study and conservation of historical and artistic heritage;
- freelance activities in the field of laboratory analysis on historical and artistic heritage.

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2 - Experts in diagnostics and technology applied to archaeological cultural heritage (geoarchaelogists and archaemetres)

Work Context
The master graduated in Cultural Heritage Conservation Science performs high responsibility functions through geological, physical, geoarchaeological and archaeometric applications:
- carrying out and coordinating research activities of stratigraphic analysis, both in the field and in the laboratory, collaborating with other professionals in the context of archaeological excavation activities;
- carrying out and coordinating surveys, stratigraphic analysis and documentation with advanced analytical and IT methods, in the contexts of archaeological excavation, or preventive and emergency archeology operations;
- dealing with the problems associated to the characterization of the various excavated materials, identifying suitable study procedures and contributing to their study and conservation;
- coordinating both public and private laboratories devoted to the physical, chemical, mineralogical, petrographic characterization of archaeological materials, identifying suitable analytical protocols and performing diagnostics for conservation and restoration purposes;
- carrying out freelance activities in relevant sectors;
- carrying out promotion and coordination activities in research projects and applications in relevant sectors;
- carrying out activities of dissemination of knowledge in the field of conservation and diagnostics of archaeological cultural heritage, contributing to the display of artifacts in the context of temporary exhibitions and museum exhibitions.

Skills Associated to the Role
The master graduated in Cultural Heritage Conservation Science possesses a specific and modern knowledge of geological, chemical, physical and biological applications, together with an in-depth multidisciplinary cultural and legislative preparation (also on the ethical issues) about diagnostics and conservation of archaeological cultural heritage, in various contexts.

Career Opportunities
- universities and research institutions promoting projects on archaeological surveys and excavations in Italy and abroad;
- museums and art galleries;
- superintendencies and protection agencies;
- enterprises of archaeological excavation and archaeological sites and parks;
- freelance activities in survey and archaeological excavation projects, consultancy in the archaeometric field;
- freelance activities in the field of communication, dissemination and scientific information, journalism and scientific publishing as regards of the sciences applied to Archaeological Cultural Heritage.

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3 - Experts in conservation applied to museum cultural heritage

Work Context
The master graduated in Cultural Heritage Conservation Science carries out functions of high responsibility in the areas of the conservation museum heritage:
- conducting and coordinating scientific research activities, including diagnostic activities in relation to collections;
- preparing measuring instruments for the control of all environmental parameters that can influence the state of conservation of museum heritage;
- managing integrated defense against harmful organisms;
- helping to formulate conservation plans, including routine maintenance and extraordinary interventions (such as flood management);
- participating in programs to increase collections, also through diagnostics on materials not yet acquired;
- contributing to and elaborating the criteria and plans for displaying the collections;
- collaborating in the enhancement of collections through cultural, educational and scientific dissemination activities;
- contributing to the activities related to the museum temporary exhibitions and museum publishing;
- contributing to the inventory and cataloging of the collections according to national and regional standards, for the purpose of public display.

Skills Associated to the Role
The master graduated in Cultural Heritage Conservation Science possesses specific knowledge of the modern applications of the chemical, physical, biological, geological and computer sciences in the field of conservation of museum assets.

Career Opportunities
- Public and private museums, also in the university contexts.

4 - Experts in diagnostics and technology applied to information storage media

Work Context
The master graduated in Cultural Heritage Conservation Science carries out functions of high responsibility in the areas of in all professional fields related to Information & Communication Technology (ICT) applications to the different types of cultural heritage:
- carrying out and coordinating analysis and design activities for the organization and digitization of cultural heritage;
- carrying out and coordinating standardization activities aimed at the interoperability of digital archives;
- coordinating digitization laboratories, managing the aspects of preparing the original information media, eventually up to restoration treatments;
- coordinating the application of "good practices" for digital preservation, managing the monitoring and migrations aspects, and other methods aimed at the safety of digital preservation;
- carrying out and coordinating analysis and design activities for the enhancement of digital cultural heritage, through paper documents and/or multimedia supports and/or on the web;
- carrying out freelance activities in relevant sectors;
- carrying out promotion and coordination activities in research projects and applications in relevant sectors;
- carrying out dissemination of knowledge in the field of conservation and enhancement of digital cultural heritage.

Skills Associated to the Role
The master graduated in Cultural Heritage Conservation Science possesses a specific and modern knowledge of ICT methods and tools for the digitization, organization, conservation and enhancement of cultural heritage. Moreover, he is trained with multidisciplinary cultural and legislative preparation on the ethical issues of the conservation and enhancement of digital cultural heritage in the various contexts of application and research.

Career Opportunities
- public and private agencies holding large cultural heritage (archives, museums, art galleries, ministerial, regional and municipal agencies, publishers);
- protection agencies;
- universities and research institutions;
- freelance activities in projects of cultural heritage digitization, conservation and enhancement;
- freelance activities in the field of cultural heritage enhancement through ICT tools.

Finally the master degree course makes ready for the profession of experts of diagnostics and technology applied to cultural heritage, as required by the recent Madia law (110/2014):

Specialists in mathematical, computer science, chemical, physical and natural sciences

Training and research specialists

Initial knowledge required

Admission requirements:
Bachelor's graduates in Diagnostics for the conservation of cultural heritage (class L-43) can access the Master's degree programme in Science and technology for the diagnosis and preservation of cultural heritage. Graduates from other eligible programmes, both in Italy and abroad, can also be admitted, if they meet skills requirements.

Admission assessment
All candidates will be assessed through an interview with a board made up of faculty members appointed by the Academic Board, with a view to identifying any shortcomings in their educational background. The interview may also take place before graduating from the Bachelor's programme. However, for the purpose of enrolment, the candidate must obtain their degree by 31 December 2024.

Curricular requirements
Access to the Master's degree programme requires solid foundations in mathematics, physics, chemistry, biology, earth sciences, agricultural disciplines, and a total of at least 60 CFU across the following areas: AGR, BIO, CHIM, FIS, GEO, ICAR, INF, ING-INF, IUS, L-ANT, MAT, SECS, of which at least 6 CFU in three out of five of the following areas: BIO, CHIM, FIS, GEO, INF.
Application for admission:
The application for admission is mandatory and must be submitted electronically from 22 January to 25 August 2024 (learn more at https://www.unimi.it/en/study/bachelor-and-master-study/degree-programme-enrolment). Graduates and upcoming graduates who will obtain their degree by 31 December 2024 may submit the application for admission.

Only graduates who have passed the assessment test may enrol. Milan University students who have submitted an application for admission, and who during their Bachelor's degree programme have earned credits in excess of the 180 requirement, through courses and/or laboratories offered by the Master's degree programme, may apply for transfer credits for the purposes of achieving the required 120 credits. Candidates from another university graduating after the interview are required to update the documents submitted to the Student Registrar as soon as they obtain their degree. Candidates who fail the interview, whether graduates or upcoming graduates, may not enrol on the Master's degree programme for the current year.

For academic year 2024/2025, interviews have been scheduled on 20 September 2024, with place and time details to be posted on the home page of the degree programme website (https://conservazionebeniculturali-lm.cdl.unimi.it/it). Candidates are required to show up with a valid ID on the specified date and time. Students from other universities must also hand in a photocopy of their ID (for in-person interviews).

Compulsory attendance
Attendance is strongly recommended for both courses and laboratories.

Internship criteria
Training is completed by:
(1) An educational internship to be completed on campus or at companies or research laboratories in Italy or abroad. For the purposes of choosing their internship, students must contact the Internship Committee for the degree programme, which will submit the proposed internship to the Academic Board for approval. This internship will award 12 credits;
(2) An internship that preferably includes experimental activities to be completed on campus or at companies or research laboratories in Italy or abroad. This activity must consist of original research assigned to the student by their thesis supervisor on a topic related to the conservation and diagnostics of cultural heritage, to be chosen from among the tracks offered by the programme.

Degree programme final exams
Upcoming graduates must pass a final exam by defending their degree thesis. This consists of the analysis and discussion of internship findings and must prove the student's ability to independently design, analyse and diagnose cultural heritage conservation issues. The final exam will award 33 CFU.
Upcoming graduates must:
a) have earned 87 CFU, including 3 CFU for English language proficiency and 12 CFU for the internship;
b) have completed their internship and written the final paper.

https://www.unimi.it/en/study/bachelor-and-master-study/graduation

Campus
Lessons and exercises/laboratories take place in the Città Studi classrooms.

Laboratories
Teaching laboratories take place both in departmental structures, equipped with technical-scientific instruments and collections, and on-field, using customised logistics solutions.
Activities in equipped laboratories take place in the following Departments: Department of Earth Sciences, Department of Chemistry, Department of Food, Environmental and Nutritional Sciences (Faculty of Agricultural and Food Sciences), Department of Physics, Department of Computer Science.

Notes
For-credit assessment B2
In order to obtain their degree, students must be proficient in English at a B2 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 B2 or higher level in English and issued no more than three years before the date of submission. You will find the list of language certificates recognized by the University at: https://www.unimi.it/en/node/39322). The certificate must be uploaded during the enrolment procedure, or subsequently to the portal http://studente.unimi.it/uploadCertificazioniLingue;
- By taking a placement test offered by the University Language Centre (SLAM) between October and January 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 B2 or higher level. Those who have not taken the placement test by the end of January 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
Experience of study abroad as part of the training programme
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
Erasmus is a grant that finances the study abroad experience at a partner university, as part of bilateral agreements with selected universities and research centers in many foreign countries. When abroad, students attend courses, carry out research activities or do an internship.
In order to get these grants, students must contact a professor of this program who will scientifically supervise the exchange. Every topic related to this program is suitable. Two types of grants are available:
Erasmus+, for attending courses and carry out research activities (refer to the call in the Geological Sciences area).
Erasmus+ Traineeship (see Placement on unimi.it website), exclusively for internships.
For Erasmus+, see the call on the Geology area in the unimi.it website. Among other agreements, please have a look at the undergraduate and graduate courses offered by TEI, Technological Educational Institute, Atene (Grecia), who has a special agreement with this program.
The call for Erasmus+ Traineeship is published on the unimi.it website for all programs. In the recent past, Traineeship partners were: Cergy-Pontoise (France), Poitiers (France), Santiago de Compostela (Spain) and Ghent (Belgium). Anyway, new agreements with other universities or research centers can be signed if a professor of this program has some scientific collaboration with them. Apart from courses and exams, any activity carried out at the abroad institution is worth 5 credits (CFU) per month.
The “learning agreement” between professors at the home and abroad institution will define the activities the student will carry out. This document, together with the transcript of the exams and other research activities, will allow for the acknowledgment of such activities by this program.
To attend courses and take exams abroad has many advantages. In addition to being an unconventional experience in a student’s life, it offers a big opportunity to practice in the local language. The students will also experience and compare different teaching systems, gaining more flexibility in their studying activities. Finally, the study abroad experience is in some cases a good opportunity to use facilities otherwise not available (for example, special equipment for experiments), work with large research groups on a cosmopolitan scale.

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
Student Desk booking through InformaStudenti
### 1st COURSE YEAR Core/compulsory courses/activities common

<table>
<thead>
<tr>
<th>Learning activity</th>
<th>Ects</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>English proficiency B2 (3 ECTS)</td>
<td>3</td>
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</tbody>
</table>

**Total compulsory credits** 3

### 2nd COURSE YEAR Core/compulsory courses/activities common

<table>
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<tr>
<th>Learning activity</th>
<th>Ects</th>
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</thead>
<tbody>
<tr>
<td>FINAL EXAM</td>
<td>35</td>
<td>NA</td>
</tr>
<tr>
<td>TRAINING</td>
<td>12</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Total compulsory credits** 45

### Further elective courses

18 credits chosen from the following qualifying exams (Conservation Sciences and Technologies area).

**N.B.** The teaching of advanced physical techniques applied to cultural heritage, laboratory can only be chosen by students who have already acquired at least 12 credits in courses in the FIS/07 and/or FIS/03 sector between the three-year and master’s degrees.

#### Characterizing Formation Activities - Earth and Natural Sciences (18 CFU)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Ects</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical methods for the environmental degradation of cultural heritage</td>
<td>6</td>
<td>CHIM/01</td>
</tr>
<tr>
<td>Calorimetry and thermal analysis, laboratory</td>
<td>6</td>
<td>CHIM/02</td>
</tr>
<tr>
<td>Conservation and valorization of scientific instruments</td>
<td>6</td>
<td>FIS/07</td>
</tr>
<tr>
<td>Physical techniques applied to cultural heritage: laboratory</td>
<td>6</td>
<td>FIS/07</td>
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</table>

#### Characterizing Formation Activities - Interdisciplinary Formation (12 CFU)

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Ects</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorimetry and color management for cultural heritage</td>
<td>6</td>
<td>ING-INF/05</td>
</tr>
<tr>
<td>Integrated course of advanced biotechnologies applied to cultural heritage: laboratory</td>
<td>6</td>
<td>(2) AGR/16, (2) AGR/11, (2) AGR/12</td>
</tr>
<tr>
<td>Movie restoration</td>
<td>6</td>
<td>INF/01</td>
</tr>
<tr>
<td>Site management and preventive archaeology</td>
<td>6</td>
<td>L-ANT/10</td>
</tr>
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</table>

**12 credits to be acquired chosen from the following related and supplementary courses**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Ects</th>
<th>Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis and diagnostics of architectural cultural heritage</td>
<td>6</td>
<td>AGR/10</td>
</tr>
<tr>
<td>Formation processes in archaeological sites</td>
<td>6</td>
<td>GEO/04</td>
</tr>
<tr>
<td>Microclimatology applied to cultural heritage</td>
<td>6</td>
<td>GEO/12</td>
</tr>
<tr>
<td>Topographic techniques and equipment for archaeological and architectonical survey</td>
<td>6</td>
<td>ICAR/06</td>
</tr>
</tbody>
</table>

**Other Formation Activities, freely selected by students among courses held by University of Milan (12 CFU)**

### COURSE PROGRESSION REQUIREMENTS

The program of each course indicates the preliminary knowledge necessary to adequately deal with the contents of the course itself. It is the responsibility, as well as the interest, of the student to comply with these indications.