



UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2020/21
MASTER DEGREE
Informatics Security (Classe LM-66)
Enrolled from 18/19 academic year

HEADING	
Degree classification - Denomination and code:	LM-66 Computer science security
Degree title:	Dottore Magistrale
Curricula currently available:	Methods for information technology security / Safe systems
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:	F2Y

PERSONS/ROLES

Head of Study Programme

Prof. Giovanni Pighizzini

Degree Course Coordinator

Prof.sa Sabrina de Capitani di Vimercati

Tutors - Faculty

TUTOR PER L'ORIENTAMENTO:

Valentina Ciriani

Fabio Scotti

Degree Course website

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

Phone 02503 16250/252 Sportello in presenza: su appuntamento / Sportello telefonico: mercoledì dalle 9.30 alle 12.30

Email: segreteria.didattica@di.unimi.it

via Celoria 18, Milano <http://www.di.unimi.it/ecm/home/organizzazione/organi-di-governo/altre-commissioni> Email: piani.studio@di.unimi.it

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via Celoria 18, Milano <http://www.di.unimi.it/ecm/home/organizzazione/organi-di-governo/altre-commissioni> Email: erasmus@di.unimi.it

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CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The masterly degree in Informatics Security aims at supplying the advanced knowledge required for professionals who will carry on research, design, implementation, verification, coordination and management of ICT systems where security and protection of the systems themselves as well as of the information they handle are crucial issues.

The masterly graduated in Informatics Security will also have the skills necessary to handle the innovation in the ICT field: to this purpose, she/he will have high-level scientific and technical competencies, methodological and operating capabilities, critical and open perspective view regarding adoption and usage of secure ICT technologies.

The masterly degree in Informatics Security foresees a graduation thesis, to be developed inside the University as well as in a private or public company and to be discussed as the final examination. The thesis is a written relation (English or Italian) structured as a scientific publication, prepared with the help of a supervisor and describing an original scientific experience

in the field of ICT security.

The degree has been designed to be proficiently followed both by people already acquainted with ICT security issues (to whom it will provide deeper insight into ICT sciences and technologies useful for security critical application) and by people coming from scientific degrees where computer security has never been specifically addressed (to whom it will supply the required competencies starting from basic aspects of ICT security). In both cases, however, training is structured around a large common basis, preserving the uniqueness of the overall degree and guaranteeing homogeneity and cultural coherence of the graduated people.

The training foresees lectures, practical exercises, laboratory courses and ICT learning support tools.

Professional profile and employment opportunities

Competencies acquired by people who obtained the masterly degree in Informatics Security are typical of high responsibility job positions in all projects requiring consultancy, analysis, design, management, marketing of medium-large information systems.

These job positions will be available in all kinds of private and public companies using ICT technologies and requiring particular attention to security and privacy issues.

More in detail, referring to the ISTAT 2008 Professional Classification scheme, the masterly degree in Informatics Security will prepare:

2114 Informatics and Telecommunication specialists

21141 Basic ICT research specialists

21142 System and application software analysts and designers.

21143 System analysts

21144 ICT security experts

21145 Computer network specialists

26200 Mathematical and computer sciences researchers

Notes

To obtain the degree, students are required to demonstrate an English language proficiency at level B2 within the Common European Framework of Reference for Languages (CEFR). This level can be assessed in the following ways:

- by submitting the language certificate achieved no more than three years prior to the submission, at level B2 or higher, recognised by the University (the list of recognised language certificates can be found at <https://www.unimi.it/en/node/359/>). The language certificate must be uploaded during the admission process;

- by taking the Placement Test, organised by SLAM exclusively during the first year, from October to January. Students who fail to reach level B1 or B2 will have to attend an English course organised by SLAM. The Placement Test is compulsory for all students who do not have a valid language certificate.

Students who do not take the Placement Test within the deadline and students who fail the SLAM end-of-course test within six attempts will have to obtain a language certificate within the year in which the language exam is scheduled.

LEVEL OF ENGLISH ASSESSED THROUGH A COMPUTER-BASED TEST DURING THE BACHELOR'S DEGREES OBTAINED AT THE UNIVERSITY OF MILAN. English levels B1 and B2 achieved no more than four years previously are deemed valid. The verification is automatic with no need to attach any certificate during the application phase.

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 30 different 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

The education program can be enriched by educational activities abroad both to deepen some topics and as socialization experience in international environments. Within the Erasmus+ program study periods can be taken in over 50 universities in Belgium, Finland, France, Germany, Greece, Lithuania, Norway, Netherlands, Poland, Portugal, Czech Republic, Romania, Spain, Switzerland, Hungary. Courses will be recognized in the personalized study plan. These periods abroad are typically 5-month long and include courses for about 30 CFU, in the area of information and communication technology and related applications. Recognition of these educational activities will be based on the Learning Agreement, to be defined in advance by the student and the Erasmus coordinator at the Computer Science Department before starting the period abroad: course in the learning agreement with passed exams will replace the educational activities of the study plan ("manifesto"), either by covering the same topics or complementing the acquired basic competences. The Erasmus Committee at the Computer Science Department will perform the recognition of CFU obtained abroad and the definition of the personalized

study plan. Similarly, stages to prepare the final dissertation are allowed in the same foreign universities. Recognition will be performed by the Department Erasmus Committee.

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, which last 3 to 12 months, through a public selection procedure.

Ad hoc commissions will evaluate:

- 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 generally begins around February each year with the publication of a call for applications specifying the destinations, with the respective programme duration, requirements and online application deadline.

Every year, before the deadline for the call, the University organizes informative meetings to illustrate opportunities and rules for participation to students.

Erasmus+ scholarship

The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which is 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.

Learn more at <https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus>.

For assistance, please contact:

International Mobility Office

Via Santa Sofia 9 (second floor)

Tel. 02 503 13501-12589-13495-13502

E-mail: mobility.out@unimi.it

Desk opening hours: Monday to Friday 9 am - 12 noon

1st COURSE YEAR Core/compulsory courses/activities common to all curricula		
Learning activity	Ects	Sector
COMPLEMENTS OF SECURITY AND PRIVACY	6	INF/01
English proficiency B2 (3 ECTS)	3	ND
PRIVACY AND DATA PROTECTION	6	INF/01
RISK ANALYSIS AND MANAGEMENT	6	INF/01
SERVICE-ORIENTED ARCHITECTURE SECURITY	6	INF/01
SYSTEM MODELING AND ANALYSIS	6	INF/01
	Total compulsory credits	33
2nd COURSE YEAR Core/compulsory courses/activities common to all curricula		
Learning activity	Ects	Sector
ORGANIZATION	6	SECS-P/10
PROCESSING OF SENSITIVE DATA	6	IUS/01
	Total compulsory credits	12
Further elective courses common to all curricula		
Free choice courses.		
Students will have to achieve 12 free cfu among the courses of the previous tables, among the following courses activated by the Department, or among all the courses activated by the university.		
Students can request the recognition of credits for training activities at external institutions, presenting a certification. Each certification can give rise to a maximum of 3 credits, and up to 2 certifications can be recognized. The students who intend to request the recognition of the certifications must complete the "application" form available on the page https://www.unimi.it/en/study/student-services/welcome-desk-infostudenti/general-forms and send ver to the secretary of his / her degree together with a copy of the certifications achieved.		
The evaluation will be carried out by a special commission based on the following parameters:		
- Validity: the certification must have been obtained for a maximum of 5 years.		

- **Specificity:** the object of the certification must be those referable to those required by the degree course in which the student is regularly enrolled.
- **Specialization:** the certification must concern specialized and / or professional skills.
- **Level:** the certification must attest to skills of a medium or advanced level. Basic and entry level certifications are excluded.

The above requests can only be submitted by students who have not already obtained these awards during the three-year course.

End of course requirements common to all curricula

FINAL EXAM		39	NA
	Total compulsory credits	39	

ACTIVE CURRICULA LIST

Methods for information technology security Course years currently available: 1st , 2nd
 Safe systems Course years currently available: 1st , 2nd

CURRICULUM: [F2Y-A] Methods for information technology security

1st COURSE YEAR Core/compulsory courses/activities Curriculum-specific features Methods for information technology security

Learning activity	Ects	Sector
ADVANCED BIOMETRICS	6	INF/01
INFORMATION SYSTEM SECURITY MANAGEMENT	6	ING-IND/35
LOGIC	6	INF/01
	Total compulsory credits	18

Further elective courses Curriculum-specific features Methods for information technology security

Students must choose 6 credits from the following courses:

ARTIFICIAL INTELLIGENCE	6	INF/01
DEPENDABILITY	6	ING-INF/07
INFORMATION MANAGEMENT	6	INF/01

CURRICULUM: [F2Y-B] Safe systems

1st COURSE YEAR Core/compulsory courses/activities Curriculum-specific features Safe systems

Learning activity	Ects	Sector
BIOMETRIC SYSTEMS	6	INF/01
COMPUTER FORENSICS	6	ING-INF/05
CRYPTOGRAPHY	6	INF/01
NETWORK SECURITY	6	INF/01
	Total compulsory credits	24