UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2026/27
BACHELOR
CUMPUTER SCIENCE FOR MEDIA COMMUNICATIONS (Classe L-31 R)
Enrolled in 2026/27

HEADING

Degree classification - Denomination and code:	L-31 R
Degree title:	Dottore
Length of course:	3 years
Total number of credits required to complete programme:	180
Years of course currently available:	1st
Access procedures:	Cap on student, student selection based on entrance test
Course code:	FAC

PERSONS/ROLES

Head of Study Programme

Prof. ssa Sabrina Gaito

Degree Course Coordinator

Prof. Sergio Mascetti

Tutors - Faculty

TUTOR PER L'ORIENTAMENTO:
Giuliano Grossi
Sergio Mascetti
Alessandro Rizzi
Roberto Sassi
Matteo Zignani

Degree Course website

https://icd.cdl.unimi.it/

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: orientamento.uscita@di.unimi.it

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: orientamento@di.unimi.it

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: erasmus@di.unimi.it

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: piani.studio@di.unimi.it

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: trasferimenti@di.unimi.it

Via Celoria 18 - 20133 Milano https://di.unimi.it/it/dipartimento/organizzazione/commissioni Email: commTesiL3@di.unimi.it

Via Celoria 18 - 20133 Milano Phone 0250325032 https://www.unimi.it/it/node/360 https://www.unimi.it/it/node/359/

Email: rappresentanti.studenti@di.unimi.it

Via Celoria 18 - 20133 Milano Phone 0250316250/252 Sportello su appuntamento (ufficio.didattica@di.unimi.it) https://informastudenti.unimi.it/saw/ess?AUTH=SAML

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The Bachelor?s Degree Programme in Computer Science for Digital Communication aims to provide solid theoretical and applied knowledge in the fundamental areas of computer science, with particular attention to their application in the creation, integration, and maintenance of technologically advanced environments for the dissemination of professional, scientific, cultural, and entertainment content.

The programme is structured into two educational tracks: one focused on social networks and mobile computing, and the other on multimedia systems. These two tracks share a substantial common core that preserves the coherence and distinctiveness of the programme, enabling cross-disciplinary mobility between tracks while ensuring cultural consistency and uniformity among graduates.

In particular, the shared educational activities encompass basic mathematics, programming languages, computer systems and

networks, algorithms and computational complexity, information systems and databases, human?computer interaction, and artificial intelligence.
To achieve the aforementioned educational objectives, the programme includes lectures, practical exercises, and laboratory-based courses.

Expected learning outcomes

Knowledge and Understanding
Acquisition of fundamental and contextual theoretical knowledge, as well as applied competences related to the development of computer systems, including:

mathematical knowledge such as discrete mathematics, continuous mathematics, probability, and statistics;
foundational computer science knowledge such as algorithms, data structures, and concepts of computational complexity;
programming knowledge concerning procedural and object-oriented programming languages;
knowledge of computer architectures and systems such as computer architectures, operating systems, computer networks, and databases;
understanding of the scientific inquiry method;
awareness of the economic, legal, ethical, social, and environmental implications of digital transformation;
knowledge related to applications of computer science to digital communication, such as web programming and the development of applications with graphical or multimedia interfaces.

Assessment methods:
The acquisition of such knowledge and understanding is assessed at the end of individual courses and at the conclusion of the entire study programme. Individual learning is evaluated through a combination of factors related to the acquisition of methodological and technological knowledge within computer science and its applications.

Applying Knowledge and Understanding
Acquisition of methodological, technological, and practical skills in computer science and its applications to digital communication, including:

the ability to apply the scientific inquiry method;
the ability to analyse and model problems based on foundational and contextual knowledge related to the development of computer systems, and to employ techniques for analysing and modelling computer systems for digital communication;
the ability to design, develop, and verify applications in industrial and scientific contexts, with particular attention to user-interaction-oriented applications;
the ability to work with the most widely used operating systems and network environments, and to use tools for database management.

Assessment methods:
The acquisition of these skills is assessed at the end of individual courses and of the overall study programme. Evaluation of individual learning is based on a combination of factors related to the acquisition of methodological and technological skills in computer science and its applications.

Making Judgements
Acquisition of autonomous and informed judgement skills in order to develop independent decision-making abilities in the analysis, design, development, implementation, evaluation, and management of computer applications of various scales and across different scientific and industrial domains, with particular attention to areas involving digital communication. Specifically:

the ability to anticipate and manage the economic, legal, ethical, social, and environmental sustainability implications of professional activities and digital transformation;
the ability to work autonomously by applying one's knowledge to concrete situations in scientific, professional, industrial/business, and institutional contexts;
the ability to develop autonomous and independent reasoning and reflections;
the ability to critically evaluate alternative design and implementation choices;
the ability to assess and interpret objective and subjective experimental data.

Assessment methods:
The acquisition of these abilities is assessed at the end of individual courses and of the study programme. Individual learning is evaluated through a combination of factors related to the acquisition of methodological and technological skills in computer science and its applications.

Communication Skills
Acquisition of appropriate communication skills, including:

the ability to interact effectively with users and domain experts, participating in interdisciplinary work groups through the

knowledge of different technical-scientific languages and communication methods;
relational and decision-making abilities, and the capacity to work effectively both by organising and by contributing to team activities;
the ability to communicate effectively, both orally and in writing, using the appropriate terminology of scientific disciplines and the various domains of computer and engineering applications;
the ability to promote and manage process digitalisation.

Assessment methods:
These skills are assessed at the end of individual courses and of the entire study programme. Individual learning is evaluated through written and/or oral examinations.

Learning Skills
Acquisition of adequate learning abilities, including:

the ability to continuously develop and deepen both theoretical and applied skills in order to remain up to date with methodological and technological developments in computer science and digital technologies;
the ability to use libraries, databases, archives, and both paper-based and electronic repositories to access relevant scientific and documentary information, also for continuous knowledge updating.

Assessment methods:
The acquisition of these abilities is evaluated at the end of individual courses and of the entire study programme, particularly through the completion of methodological and technological in-depth assignments.

Professional profile and employment opportunities

Expert in Information Technologies with Applications to Social Media and Mobile Devices
Role in a Work Context
The programme trains experts capable of carrying out professional and/or research activities involving theoretical and practical design responsibilities in the fields of machine-mediated communication and networked systems. Graduates acquire strong theoretical and applied competences for designing and developing innovative computer systems that may include web and mobile applications, and that make use of cloud computing technologies and social media.
Competences Associated with the Role
These professionals are able to design distributed systems that include advanced applications with user interfaces, and to make use of data derived from distributed applications and social media.
Career Opportunities
Highly specialised technical professions related to the web, distributed systems, and social media. Such professionals may work in public administration, industry, the service sector, and various types of research institutions.

Expert in Information Technologies with Applications in Multimedia
Role in a Work Context
Professions in this category operate at the design, research, technical, and creative levels across various domains of communication and interaction involving the use of multimedia information (images, audio, video, data). These professionals may work in radio and television, cinema, photography, the web, visual and advertising communication, artistic, musical, and entertainment events, video-game development, and applications with advanced graphical interfaces.
Competences Associated with the Role
These professionals are capable not only of understanding the technological aspects of new media and appropriately managing related content, but also of acting as managers and innovators in the field of communication through multimedia information. The effective design and management of new digital media?web, television, cinema, photography, digital publishing, multimedia productions, etc.?requires multidisciplinary competences historically drawn from heterogeneous cultural areas, all grounded in the understanding of computer-science aspects supporting these disciplines.
Career Opportunities
Graduates perform highly specialised professional activities in communication for new media, such as web, digital radio, digital television and cinema, post-production, photography, audiovisual and advertising communication, and in technologies related to computer graphics, augmented and virtual reality, advanced and 3D visualisation, computer-mediated communication tools, and the development of interfaces and natural interaction processes with machines.

Initial knowledge required

Requirements and knowledge required for admission

To be admitted to the Degree Course, candidates must have a secondary school diploma or another qualification obtained abroad, recognized as suitable, as well as having adequate initial preparation. In particular, knowledge of basic scientific disciplines and understanding of elementary logic with a level of depth equal to that deriving from secondary school preparation are required.

Methods of verification of knowledge and personal preparation

The methods of access are established by the Admission Notice published on the page:

https://informatica.cdl.unimi.it/it/iscriversi.
The course has a limited number of places in order to guarantee the quality of the educational offer in relation to the available resources and requires a TOLC (CISIA Online Test) as a test for admission. For enrollment in the first year, 150 places are available, of which 5 are reserved for non-EU students not residing in Italy. The TOLC can be taken at the University of Milan or any other university belonging to CISIA (Interuniversity Consortium for Integrated Access Systems). Registration for the TOLC must be done on the CISIA website (https://www.cisiaonline.it/).
The TOLC valid for registration is the TOLC-S, composed of the following sections: Basic mathematics (20 questions - 50 minutes), Reasoning, problems and text comprehension (15 questions - 30 minutes). Score: +1 for each correct answer, -0.25 for each incorrect answer, 0 for each unanswered question. The TOLC contains some additional sections (Biology, Chemistry, Physics, Geology, English). The results of these sections do not contribute to the test score.
After taking the TOLC-S, students must register for the selection for admission to the Degree Course, as indicated in the announcement. They will then be included in the merit ranking that will be formulated on the basis of the score obtained in the test, weighted, for each section, according to the criteria indicated in the announcement. The winners will be able to enroll within the established deadlines.
The selection is divided into distinct periods starting in February and ending in the first days of September.
Enrolled students who have not achieved a score greater than or equal to 10 in the Basic Mathematics module of the TOLC will be assigned Additional Training Obligations (OFA).

Additional training obligations and OFA recovery methods

For students with OFA, support activities will be organized in the period October-December, followed by a recovery test with which the student will have to demonstrate that he/she has improved his/her preparation. In the absence of this evidence, the student will not be able to take any second-year exams before passing the Mathematics I exam. Information: https://icd.cdl.unimi.it/it/studiare/le-matricole

Transfers and second degrees

Students already enrolled in a degree course at the University of Milan, at another University or already graduated, can be exempted from the test only if they meet the following requirements to be verified during the pre-evaluation of their career:
- if the student, during the pre-evaluation phase, is recognized at least 30 credits, he/she is admitted to the second year or third year with exemption from the test;
- if the student is recognized less than 30 credits, he/she must register for the test and selection as indicated above.
To access the pre-evaluation, a specific request for preventive evaluation of the career must be submitted by accessing the online service indicated in the admission notice. Those interested must declare all the exams taken with the relative sectors, credits and grades and attach the course programs. For further details on the procedure, please refer to the announcement. The request for career evaluation must be submitted without fail by the date indicated in the announcement. The outcome of the evaluation will be communicated via email by the date indicated in the announcement.
Students admitted to years subsequent to the first must enroll by the deadlines and in the manner specified in the announcement.

Part-time enrollment

Part-time enrollment is also possible. The relevant Regulations can be found at the following link https://www.unimi.it/it/ateneo/normative/regolamenti/regolamento-le-iscrizioni-tempo-parziale

Compulsory attendance

Attendance is strongly recommended for both courses and laboratories.

Internship criteria

The internship is mandatory, is linked to the final paper and can be carried out on or off campus (at a company or another organization).
The internship experience normally consists of participating in a significant project, within which the student will independently carry out the activities assigned to him/her in accordance with the number of credits awarded for the internship under that programme (see "Manifesto degli studi").
The final paper must document the design and implementation aspects of the activity carried out, the professional or scientific skills learned, as well as its connections with the state of the art in the IT sector.
The internship must last at least 12 weeks.
Upon completion of the internship, the student will earn 18 CFU, subject to the positive opinion of the Academic Board.
For the student to start the internship, he/she must comply with all the provisions of the relevant regulations.
Find out how to apply for an internship, read internship regulations and more at https://icd.cdl.unimi.it/it/studiare/stage-e-tirocini

Degree programme final exams

The degree is obtained by passing a final exam, which consists of the presentation of a final report prepared by the student and related to the internship activity carried out. It must concern a theoretical or experimental activity carried out by the

student, independently although under the guidance of one or more supervisors, at research laboratories, institutions or companies.

Campus

IT course venues: via Celoria 18 - Milan.
Other course venues: Teaching sector, via Celoria 20; Teaching sector, via Golgi 19; Teaching sector, via Venezian 15.

Laboratories

Computer laboratory (Silab) at the Department of Computer Science, via Celoria 18, Milan.

Notes

In order to obtain their degree, students must be proficient in English at a B1 level under the Common European Framework of Reference for Languages (CEFR). This proficiency level may be certified as follows:
- By submitting a language certificate attesting B1 or higher level in English and issued no more than three years before the date of submission. You will find the list of language certificates recognized by the University at: https://www.unimi.it/en/node/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 December of the first year. Students who fail the test will be required to take a SLAM course.
The placement test is mandatory for all those who do not hold a valid certificate.
Those who have not taken the placement test by the end of December or fail the end-of-course exam six times must obtain the necessary certification privately before graduating.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.

The agreements entered into by the University with over 300 universities from the 27 EU member countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organisations.

Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

The University of Milan is a member of the 4EU+ European University Alliance that brings together eight public multidisciplinary universities: University of Milan, Charles University of Prague, Heidelberg University, Paris-Panthéon-Assas University, Sorbonne University of Paris, University of Copenhagen, University of Geneva, and University of Warsaw. The 4EU+ Alliance offers integrated educational pathways and programmes to promote the international mobility of students (physical, blended and virtual).

Study and internships abroad

The 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, Czech Republic, Finland, France, Germany, Greece, Hungary, Lithuania, Norway, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Switzerland, Turkey. 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.
Erasmus: the coordinator for the Department of Informatics is Prof. Fabio Scotti.
International Programs: the coordinator for the Department of Informatics is Prof. Davide Rocchesso.
More information are available at the following link: https://di.unimi.it/it/rapporti-internazionali/mobilita-internazionale/opportunita-internazionali

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 organises informative meetings to illustrate mobility opportunities and rules for participation.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which may be supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University Language Centre (SLAM).
https://www.unimi.it/en/node/8/

Learn more at https://www.unimi.it/en/node/274/

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
Contacts: InformaStudenti;
Student Desk booking through InformaStudenti

1st COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
COMPUTER ARCHITECTURE		6	INFO-01/A
COMPUTER PROGRAMMING I		12	INFO-01/A
English assessment B1 (3 ECTS)		3	NN
HUMAN-COMPUTER INTERACTION		6	INFO-01/A
INFORMATION TECHNOLOGY AND AI LAW		6	GIUR-17/A
MATHEMATICS I		9	(5) MATH-03/A, (4) MATH-02/B
MATHEMATICS II		9	(4) MATH-03/A, (5) MATH-02/B
OPERATING SYSTEMS		6	INFO-01/A
	Total compulsory credits	57	

2nd COURSE YEAR (available as of academic year 2027/28) Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
ALGORITHMS AND DATA STRUCTURES		6	INFO-01/A
COMPUTER NETWORKS		6	INFO-01/A
COMPUTER PROGRAMMING II		6	INFO-01/A
DATABASES AND WEB		12	INFO-01/A
DIGITAL MARKETING		6	ECON-07/A
SIGNAL PROCESSING		6	IINF-05/A
STATISTICS AND DATA ANALYSIS		6	STAT-01/A
WEB AND CLOUD APPLICATIONS		6	INFO-01/A
	Total compulsory credits	54	

Elective courses		
The student must earn an additional 6 ECTS credits by choosing the course corresponding to one of the following two tracks: **– Foundations of Digital Social Media for the Social and Mobile Computing track;** **– Computer Graphics for the Multimedia track.**		
COMPUTER GRAPHICS	6	INFO-01/A
FUNDAMENTALS OF DIGITAL SOCIAL MEDIA	6	INFO-01/A

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

DATA VISUALIZATION		6	INFO-01/A
	Total compulsory credits	6	

Elective courses

The student must earn an additional 21 ECTS credits by completing the courses included in the selected track:
– Social and Mobile Computing track (Table A);
– Multimedia track (Table B).

TABLE A
Optional Activities (Social and Mobile Computing track)

MOBILE COMPUTING	9	INFO-01/A
SOCIAL MEDIA MINING	12	INFO-01/A

TABLE B
Optional Activities (Multimedia track)

MULTIMEDIA INFORMATION	12	INFO-01/A
MULTIMEDIA PROJECT	9	INFO-01/A

The student must earn 12 ECTS credits as free electives chosen from the courses listed in the previous tables or from any course offered by the University, provided that they are consistent with the educational program.
Courses belonging to degree programs from a previous academic system (old-system degree programs) may not be selected.
Students may request the recognition of ECTS credits for training activities carried out at external institutions by submitting the corresponding certification. Each certification may grant up to 3 ECTS, and up to two certifications may be recognized.
Students wishing to request recognition of certifications must complete the "application" form available at:
https://www.unimi.it/en/study/student-services/welcome-desk-informastudenti/general-forms
and submit it to the student office of their degree program together with copies of the obtained certifications.
The evaluation will be carried out by a dedicated committee based on the following criteria:
– Validity: the certification must have been obtained no more than 5 years prior.
– Specialization: the certification must concern specialized and/or professional skills.
– Level: the certification must attest to intermediate or advanced-level skills. Basic or entry-level certifications are excluded.

End of course requirements

FINAL EXAM		3	NN
SEMINARS		3	NN
TRAINING		18	NN
	Total compulsory credits	24	

COURSE PROGRESSION REQUIREMENTS

The course contains the following obligatory or advised prerequisites

Learning activity	Prescribed foundation courses	O/S
STATISTICS AND DATA ANALYSIS	MATHEMATICS I	Core/compulsory
ALGORITHMS AND DATA STRUCTURES	COMPUTER PROGRAMMING I	Core/compulsory
COMPUTER PROGRAMMING II	COMPUTER PROGRAMMING I	Core/compulsory