

## Career opportunities

The professional activities of the computer engineer include: the design and implementation of information systems for enterprises; the automation of services in public and private organizations by means of modern technologies based on the Internet and the Web; the development of multimedia and hypermedia systems; the development of domotics applications and embedded systems; the control of productive processes and of complex systems; the modelling of the environment; the development of robotic systems and of artificial intelligence applications; the design of network architectures and of distributed information systems; the development of integrated systems for the supervision and the control of industrial processes; the application of new technologies for manufacturing, just to mention some of them.

## Accommodation

Como Campus offers accommodation in the direct vicinity of the Campus. The residences of the Politecnico di Milano in Como may be the ideal solution and, actually, represent a perfect blend of individual tranquillity and social life, offering a comfortable and functional environment, promoting cultural integration and exchange in a situation of mutual respect. It is possible to stay into flats for one person, two, three and four people.

All accommodations are furnished and have kitchen.

Cost: about € 235.00 to € 450.00 per month.

You are entitled to accommodation at reduced rent if you have Diritto allo Studio (DSU) benefits.

([www.polimi.it/en/scholarships](http://www.polimi.it/en/scholarships))

## Academic Scholarship and Laurea Grants

Each year, Politecnico di Milano, through competition, offers a number of economic benefits including scholarships, grants for participation in international mobility programs, degree awards, fiduciary loans at subsidized interest rates, facilities for accommodation and meals:

- Diritto allo Studio (DSU), financial and merit-based scholarships assigned after a Call for Grant issued yearly;
- Merit-based scholarships, for the most talented International candidates to Master of Science programmes;
- Sports scholarships, financial support to good students practicing high level sports.

Thanks to the cooperation with public and private partners, there are other scholarships and grants available exclusively to students enrolled at the Como Campus: a number of merit based scholarships to the most talented international candidates admitted to a Master of Science programme. Students obtaining a scholarship will have to pay only an administrative fee (about €200).

In addition yearly, local institutions and associations offer other Degree and Study Awards to students enrolled at the Como Campus.

# Como Campus



The Como Campus is the "oldest" of the 7 campuses distributed in the Lombardy Region. Thanks to collaboration with the Chamber of Commerce and the Industrial Federation of Como city, the Como Campus was established in 1989. The Como Campus offers the opportunity to enroll in fully-English taught programmes with a highly international student body. Our campus is located in a small, beautiful city providing user friendly facilities. There are many international students at the Como Campus attending the international Specializing Masters, the Erasmus+ or the Master of Science programmes. Here they find both the high quality teaching of the Politecnico di Milano with its up-to-date and advanced teaching methods and the student services.

Como city is situated in the middle of some green mountains overlooking the lake. The city offers a very wide range of truly amazing landscapes and panoramas. Como is also located in a strategic position between Switzerland and Milan. It is around 25 km far from Lecco, Varese and Lugano, respectively.

Como has been a tourist spot since the Roman Age. The historical centre within the old medieval walls is rich with artworks and monuments. Its valleys offer a series of opportunities for mountain lovers. Como Campus is situated within the city of Como, a few minutes walking distance from Como Borghi Railway Station and 20 minutes walking distance from the town centre. You can easily reach the Como campus buildings by public transportation. There are many cultural events in both the city and its surroundings. Special offers and discounts are provided for by some local organizations and associations (movies, plays, classical music concerts, etc.).

## Contacts

### Como Campus - Student Services

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### Como Campus - Welcome Desk

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# Master of Science in Computer Science and Engineering

(Como Campus)



# Master of Science in Computer Science and Engineering

## Presentation

The Master of Science (M. Sc.) Program in Computer Science and Engineering is designed not just to fit this scenario, but also to stimulate its growth, as it aims at training engineers with a solid background, capable of developing and exploiting the methods and the tools of information and automation engineering in a broad variety of applications. The resulting professional profile is highly requested in the job market.

The M. Sc. Program in Computer Science and Engineering has the twofold objective of guaranteeing a high professional qualification and of providing students with strong engineering skills. Such characteristics are crucial to achieve the flexibility and the ability to adapt to the new technologies that are emerging in the rapidly evolving panorama of ICT.

Besides classical foundational courses for a Master Program in Computer Science and Engineering, the educational offer at the Como Campus is particularly rich in the fields of Ambient Intelligence, data and signals engineering, web architectures and applications, computer engineering methods and applications for communication and society. By combining this expertise with selected management related topics (at the Bovisa campus), it is also possible to pursue a managerial and entrepreneurial career in ICT. All the courses of the Master degree are taught in English.

## Eligible students

Students holding a Bachelor of Science (B. Sc.) or foreign comparable degree can apply to the M. Sc. program. Prospective students with a B. Sc. degree in a related area are not automatically granted admission to the program but are required to undergo a selection process that evaluates their curriculum as well as their background. The selection process adheres to the general regulations of the Politecnico di Milano, and the specific rules of the School of Industrial and Information Engineering and of the Board of Teachers ("Consiglio di Corso di Studi").

## Subjects

The strongly interdisciplinary nature of computer engineering and of its ever growing applications requires a wider and wider set of skills, which include computer architectures, information systems, database management systems, web technologies, pervasive systems, multimedia systems, computer graphics, artificial intelligence – to mention a few of them.

Besides classical foundational courses, some in depth skills can

be gained focusing on five main areas: Ambient intelligence; Data and signals engineering; Web science and engineering; Communication and society engineering; ICT engineering, business and innovation.

The Como Campus of the Politecnico di Milano offers five M. Sc. tracks in Computer Science and Engineering:

- **AMBIENT INTELLIGENCE** The field of Ambient Intelligence (Aml) envisages a digital environment where humans interact with multiple smart electronic devices, that are aware of the context they operate into and are capable of adapting their response to the users' requirements, anticipating their behaviour and responding to their presence. Processing power is embedded and distributed in all the devices communication technologies, which allow to connect large numbers of devices (e.g., sensors) through wireless networks and can handle large amounts of data and information.

Different application areas are currently being pursued depending on the specific environment considered (smart homes, smart buildings, smart cities, smart transportation systems).

- **DATA AND SIGNALS ENGINEERING:** "We're drowning in information and starving for knowledge." By this simple scenario Rutherford D. Rogers describes the overwhelming amount of data a modern Computer Engineer has to deal with in terms of finding efficient ways to store/retrieve it, while trying to make some sense out of it. Large repositories of information are now available ranging from collections of structured data (i.e., databases, data-warehouses, etc.) to repositories of unstructured texts in natural language (i.e., world wide web, digital libraries, etc.). By deepening their knowledge in advanced topics in Computer Engineering and Computer Science, students enrolled in the M. Sc. curriculum of Computer Science and Engineering have the opportunity to tailor their studies toward the emerging fields of multimedia information retrieval, pattern recognition, data mining, model identification, fault detection, knowledge management and business intelligence.

- **WEB SCIENCE AND ENGINEERING:** The Web Science and Engineering track aims at providing students with the skills necessary to solve problems in which the Web plays a central role, in terms of architecture, content, and users' interactions. The curriculum is multidisciplinary, and spans topics that include fixed and mobile Web architectures, Web application development, information retrieval, semantic web, Web data and stream processing, machine learning, and Web data analytics, Web interfaces for crowdsourcing, human computation and serious games, Web-connected sensing and Internet-Of-Things (IoT) infrastructures. The track will draw examples from applications in diverse fields such as online digital businesses, environment monitoring, digital humanities, social science, and more.

- **COMMUNICATION AND SOCIETY ENGINEERING:** The track focuses on the integration of computer science and communication skills, for designing, implementing, presenting and evaluating innovative applications (web and multi-channel). The courses address: fundamentals of communication sciences

(information and communication quality), argumentation theory (professional communication), computer mediated communication (multimedia interactive applications), visual communication (computer graphics) and social aspects of computer mediated communication (communication and society, accessibility). The possible application domains include fast-growing fields like eTourism, eLearning, eFood, eCulture, highly interactive web sites, multimedia applications for mobile devices, etc. The actual balancing between the core technological topics and the interdisciplinary subjects can be largely determined by the student, in compliance with a few general rules.

- **ICT ENGINEERING, BUSINESS AND INNOVATION:** Within modern enterprises, Computer Science and Engineering graduates are expected to work on IT-centered projects, but at the same time they must be aware of the managerial, economic, and societal impact of their work. That is why companies are now seeking professional profiles that combine a solid computer science background with managerial capabilities. This track aims at filling this gap, by providing candidates with a mix of pre-selected Computer Engineering and Management Engineering courses. This allows students to focus on the foundational aspects of the two disciplines, and then to concentrate on some advanced topics in Computer Engineering. Furthermore, the track includes a broad cross-disciplinary project course, carried out in collaboration with companies, whose aim is to put students in touch with real-life industrial scenarios, groupwork and exchanges between different roles, thanks to the mix of Computer science and Management students. The professional profile originating from this track is that of a Computer Engineer that is capable of developing new enterprises or that, in a company context, can actively collaborate with the management. This track is open to a limited set of students.

