# Management Engineering

MASTER OF SCIENCE IN





# POLITECNICO DI MILANO

Politecnico di Milano is one of the most outstanding universities in the world, **ranked 23th in the Worldand 1st in Italy** according to **QS World University Ranking by Subject 2024 - Engineering & Technology**. Founded in 1863, it is the largest school of Architecture, Design and Engineering in Italy, with 2 main campuses located in Milan, heart of fashion and design industries, and 5 campuses based around the Lombardy region, one of the most industrialized areas of Europe.

Many important scientists and architects studied and taught here; among them Achille Castiglioni, Gio Ponti, Renzo Piano and Aldo Rossi - both Pritzker Prize in 1990 and 1998 respectively - and Giulio Natta, who was awarded the Nobel Prize in Chemistry in 1963.

Politecnico di Milano is organized into 12 Departments, responsible for planning of the research strategies, and 4 Schools, responsible for the organization of education, 2 of them covering the fields of Engineering, 1 focused on Architecture, Urban Planning and Construction Engineering, and 1 School devoted to Design.

Thanks to a strong **internationalization policy**, several **study programmes are taught entirely in English**, attracting an everincreasing number of talented international students, now forming a diverse community from more than 100 countries.

**Inter and multidisciplinary approaches** are fostered throughout the academic career, in particular at the PhD School and the ASP (Alta Scuola Politecnica), a school for young talents from all over the world, who develop their skills in a team work context to pursue complex innovation projects. **Teaching is closely related** 



II Facade of thePolitecnico di Milano,Leonardo Campus II



**to research**, a key commitment that enables to achieve results of high international standards, while creating connections with the business world.

Strategic research is carried out mainly in the fields of energy, transport, planning, management, design, mathematics and natural and applied sciences, ICT, built environment, cultural heritage, with more than 250 laboratories, including a Wind Tunnel (unique in the world for configuration and features), a Crash Test Centre, PoliFAB (the University's lab for micro and nano production) and PoliFactory, a laboratory where new design processes are developed.

# POLITECNICO DI MILANO SCHOOL OF MANAGEMENT

The School of Management was established formally in 2003 and it groups together Polimi Graduate School of Management (founded in 1979) and DIG (Department of Management, Economics and Industrial Engineering - Dipartimento di Ingegneria Gestionale), established in 1990, bringing together all research and education activities in the field of management.

The School of Management has three main features:

- An essential focus on the themes of innovation, change and digital strategy to support and guide business
- Inescapable attention is placed on the rational, scientific and quantitative approach. Typical of the engineering mindset
- Continuous research with an interdisciplinary approach in research and teaching, thanks to our access to the skills and professionalism of the Politecnico di Milano ecosystem

# **ACCREDITATIONS & RANKINGS**



**OUR** VALUES: The School of Management shares its founding values with its University. INTEGRITY Faculty members, staff, students and our partners act in full respect of the law, rules and practices. Illegal and unethical behaviour must be rejected under all circumstances. **RESPECT** We expect Faculty members, staff, students and our partners to show full respect for other people's needs, the environment and society. Respect is a prerequisite for valuing and supporting an international environment in which diversities of gender, culture, beliefs, personalities, political ideas and backgrounds positively influence one another. **EXPERTISE** Research and education must both relate strongly to the economy and the corporate world in order to support an effective transfer of knowledge to the community.



# DEGREE IN MANAGEMENT ENGINEERING

The modern world has seen the development of complex systems, with a **strong interaction between technical**, **economic, and organisational aspects**, fostering the need for a new professional figure that stays at the intersection of these aspects and manages them in an innovative way. This role has been increasingly adopted by engineers who enriched their abilities with strong managerial competences, leading to the rise of a new breed of professionals: the **manager-engineers**.

Blending strong scientific knowledge and approach with deep managerial competence, Politecnico di Milano has been able to create a formal degree course to train this **emerging professional figure** that has evolved naturally throughout the industrialised world.

The Management Engineering Programme is structured in a three-year Bachelor of science degree and a two-year Master of Science degree.

Management Engineers work in all types of industries and sectors and cover a wide-reaching range of activities, such as designing and managing production and logistics systems, strategic planning, business organisation and management, economics, planning and managing technology and innovation, internationalization processes, management control systems, corporate and market finance, economics and management of companies in regulated sectors and network services, large-scale project planning and management, internet applications and ICT management.

#### **GIOIA FERRARIO**

Global Chief People Officer & Managing Director, JAKALA

The experience at Politecnico helped me to develop strong competences both from a technical and from a managerial perspective. It gave me the tools to think strategically and deal with the changes that are taking place in the world.

I think this is very important for the new generations of engineers and it is one of the aspects I always search for when I interview new candidates. I feel this can make the difference in the current competitive context.

# MASTER OF SCIENCE IN MANAGEMENT ENGINEERING

# HIGH-LEVEL MANAGEMENT SKILLS INTEGRATED WITH TECHNICAL COMPETENCES TO DEAL WITH COMPLEX AND INNOVATIVE SYSTEMS

The Master of Science in Management Engineering trains engineering professionals that are ready to meet today's business challenges with innovative solutions. This programme offers the opportunity to really integrate high-level management skills with in-depth technical competences, to enable students to deal with complex systems in many different areas (for example, production, logistics, supply chain management, accounting, finance, economics, innovation, internationalization, and technology management).

# **KEY FACTS**



#### MARIA ALEJANDRA DE LA CRUZ OSPINOHR Pricing Project Manager, Iveco Group

When I decided to study at Politecnico di Milano my main motivation was learning the best practices of a World-Class country in manufacturing and of one of the best technical universities in Europe. Today, two years after my graduation, I am proud and satisfied of being a Polimi Alumna, since it taught me how to think strategically when managing any process within the company.

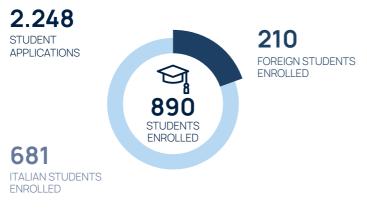
It was the perfect complement to my bachelor studies and it opened the doors for me to working for Pirelli, one of the world's leading tyre manufacturers.

Management Engineering is inherently multidisciplinary and students attending this programme have the opportunity of choosing from a broad range of courses, based on different teaching methods spanning from theoretical lectures, practical sessions, case studies, project works, and laboratories. A vital part of the learning experience consists in the involvement of students in real projects with corporations, SMEs, public bodies or non-profit organisations, where they can apply the skills, methods, and knowledge acquired through the courses.

The Master's Degree is held at the Milan campus.

# SELECTION PROCESS

(average data related to the last three years, from 2021/22 to 2023/24)



The Master of Science in Management Engineering is a two-year programme comprising a total of 120 ECTS. The first year provides a common knowledge basis that constitutes the foundation of the Master of Science programme.

The second year is articulated in 14 majors that cover a diversified range of disciplines. Each major is constituted by 25 ECTS that are specific to the selected subject area and built around a practice-based lab, developed in collaboration with companies and institutions. The major is then complemented by 20 ECTS of elective courses, to give students the possibility of receiving a customized and multidisciplinary education, in line with the professional profile they aim to develop.

60 ECTS 25 ECTS 20 ECTS	
Accounting, Finance & Complex Marketing Stategy & Marketing   Marketing Stategy & Marketing   Marketing Business & Industrial Economics + 2 OUT OF 4   Mainty Data Analysis Operations Management Industrial Technologies Energy Management   Mainty Data Analysis Operations Management Industrial Technologies Energy Management   Business & Industrial Economics + 2 OUT OF 4 Sustainability & Social Impact   Mainty Data Analysis Operations Management Industrial Technologies Digital Business Innovation   Business & Industrial Economics + 2 OUT OF 4 Digital Business Innovation   Mainty Data Analysis Operations Management Industrial Technologies Entrepreneurship   Mustrial Technologies Industrial Business   Management Industrial Technologies Entrepreneurship   Mover Torial Strategy Projects Business International Business	MASTER THESIS 15 ECTS

# MASTER STRUCTURE

# MENTORSHIP PROGRAMME

The objective of the Mentorship Programme is to offer to a few selected Master of Science students a very high added-value experience by participating in some activities that will foster their professional and personal development and their academic career. The Programme is for students enrolled in the second year of the MSc.

# 1. Meeting Managers:

Networking meetings with outstanding managers in the industrial context and some faculty members, focused on critical relevant topics not necessarily covered within the core courses.

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# 2. Senior Mentorship:

Every selected student will be assigned a senior alumnus/a with a relevant working experience in order to be guided in professional choices after graduation according to his/her personal aspirations.

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# 3. Civic Responsibility:

A constructive dialogue with some political institutions (or similar entities) in order to let students understand that they have a relevant and positive impact on society far beyond their professional career.

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# 4. Active Learning:

Direct involvement in education support/tutoring activities at the Bachelor level, having thus the opportunity to further consolidate their knowledge and try to act as tutors/mentors.

# **MOOCs - ONLINE COURSES**

**POK** (Polimi Open Knowledge) is the **MOOCs** portal (Massive Online Open Courses) providing online courses, free and open to everybody.

The main objective of the portal is to support the students, not only from Politecnico di Milano, in crucial stages of their educational and professional career: from high school to university, from bachelor's to master's degree, and from university to the workplace.

Courses are open to everybody: it is sufficient to register on the portal to access videos, content, activities and self-assessment tests.

Several MOOCs are **designed specifically for Management Engineering students**, both at the Bachelor and the Master of Science levels, and are available in English and Italian. Some of these include Fundamentals (Organization, Economics, Operations, Strategy, Financial and Management Accounting, Project Management beyond Planning and Control) from the series **Introduction to Management Engineering**, designed to introduce prospective master students and people interested in managerial disciplines to the key fundamentals of Management Engineering. Other courses are dedicated to Methodology (Survey Research, Case Study), etc.

The technology platform is a customization of **Open-EDX**, the open source platform released by EDX - the initiative resulting from a joint venture between MIT and Harvard.

Discover active MOOCs at: www.pok.polimi.it



# STUDENTS & ALUMNI EXPERIENCES

Alessandro Paravano Master of Science



Valeria Tiberi Master of Science



Carlo Taddia Master of Science



#### Alessandra Brambilla

Chief Operating Officer, Western Europe, Microsoft



# Luigi Binelli

Group Chief Supply Chain Officer and Manufacturing Director Italy, MTD Medical Technology and Devices



Michele Gerometta Master of Science

discover their experiences here >



# **Fabio Dinale**

Executive Vice President Business Development, Hitachi Zosen Inova





Paola Scarpa Managing Director & Partner, Boston Consulting Group



President and CEO, BMW Group



Tiziana Olivieri Europe Chief Sales Officer, Avanade



Roberta Regis Group Chief Transformation Officer, PRG Retail Group



**Paolo Poma** 

Chief Financial Officer & Managing Director, Automobili Lamborghini S.p.A.



Simona Pasero Head of COO Office & Strategy, Generali Investments



Davide Di Domenico Managing Director & Senior Partner, BCG

## **INTERNAL DOUBLE DEGREES**

The Internal Double Degrees are joint programmes designed in collaboration with other Politecnico di Milano Study Programmes with the aim of providing further skills, related to other subjects, to the management engineer, in order to develop new professional profiles able to meet the challenges and new opportunities of some specific sectors.

# SOME EXAMPLES OF THESE DOUBLE DEGREES ARE: Double Degree in Management Engineering and Product-

# Service System Design

The Double Degree in Management Engineering and Product-Service System Design aims at developing a new professional figure that is highly specialized in the fields of design and management, strategy development and innovative business models. Students that undertake this double degree programme will develop competences that go beyond product design to embrace the entire product-service-communication chain, with a special focus on services and complex systems of values for people and for businesses, joining the capability to conceive and visualize business models and to create value and lead the innovation process.

## POLIMI AMBASSADOR

Within the context of the interuniversity framework project "Tecnologie delle Transizioni", Politecnico di Milano has activated high-level training courses aimed at creating new professional figures in Green Technologies, Smart Infrastructures, Inclusivity Design and Creative Thinking that:

- have skills in specific areas consistently with the training project (green/smart/inclusivity/creative)
- acquire enabling digital technologies in line with the profile
- master interdisciplinary tools, methods, and aptitude for a systemic vision
- develop talent to operate in interdisciplinary and multisectoral contexts acquired through exposure, even in teams, to case studies and challenges

The updated list of programmes that start each year and related information are available at <u>https://management-</u> eng.polimi.it/en/masterof-science/internaldouble-dearees/

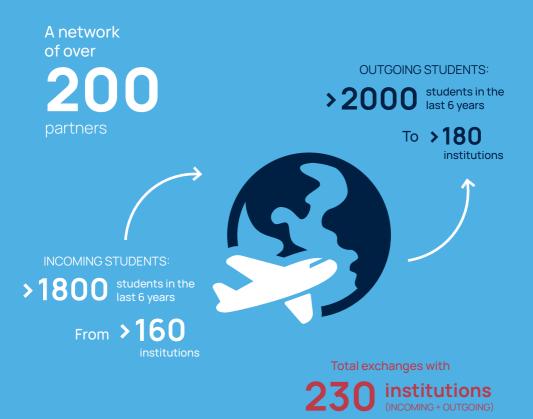
#### For ore information:

www.polimi.it/en/ education/high-leveltraining-courses/polimiambassador-programs

# **INTERNATIONALIZATION**

The Management Engineering Degrees at Politecnico di Milano offer many opportunities for international exchange and mobility experiences: the classic Erasmus programme, Double Degrees in collaboration with prestigious foreign universities, and special programmes with different durations, ranging from a few days to one year.

Exchanges with over 200 international institutions worldwide are available to students. Every year over 450 Management Engineering students go abroad, while we greet the same number of incoming exchange students on our campuses.



# INTERNATIONAL NETWORKS

# > ALLIANCE4TECH

Alliance4Tech consists of four Top Engineering Institutions of different European cultures, located in global cities in the economic heart of Europe, forming a European Campus without borders for their students and faculties.



The Alliance4Tech Partner Universities (Politecnico di Milano, TU Berlin, University College London, CentraleSupelec Paris) will enhance and develop the following initiatives for their prospective and respective students:

- Free-mobility/Full flexibility to switch from one city to another every semester, if there is former official approval of both the home and host Institutions
- > Practical activities and new pedagogical approaches
- > Internship opportunities in companies
- > Seasonal Schools in scientific fields and/or soft skills and employability and/or any fields of common interest
- > A multicultural and geographically **diverse environment** with students coming from within Europe and outside Europe alike

For more information www.alliance4tech.eu

# **IDEA LEAGUE**

# The IDEA League IDEA League

is a focused network of leading European

Universities of science

and technology. Its members are TU Delft, RWTH Aachen, ETH Zurich, Chalmers University and Politecnico di Milano.

The IDEA League organizes Summer Schools, Doctoral Schools and tracks for highly talented students.

Within the IDEA League network students, researchers and supporting staff collaborate to improve education, research and quality assurance.

For more information www.idealeague.org

# **UNITECH**

The **UNITECH International Society** was founded to allow the academic and corporate world to jointly educate a group of talented young engineers, to enable them to successfully manage future challenges in the global industry. This International Mobility Programme is aimed at students interested in deepening their technical-



scientific knowledge and in developing managerial skills in an international environment, integrating a period of studies abroad with an internship in a multinational firm, while also providing a platform for networking and exchange of ideas.

For more information www.unitech-international.org

## INTERNATIONAL DOUBLE DEGREES

The list of partner universities is available at

www.management-eng. polimi.it/en/internationalexperience/internationaldouble-degrees Together with a selected number of partner universities, Politecnico di Milano offers international Double Degree Programmes, some of which have a specific curriculum in Management Engineering. The Double Degree Programmes provide an important international experience and allow students to earn, in just two and a half years, a double degree, both from the Politecnico and from the partner University.

A significant amount of work must be carried out on the final thesis, which includes an Internship. This allows them to consolidate the acquired skills and facilitates the start of a career.

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# Audencia Nantes School of Management



Audencia Nantes School of Management is among the top universities in Europe and offers programmes that are regularly listed in the mostwell-known international rankings (such as The Financial Times, The Economist). The School has obtained many prestigious accreditations, such as EQUIS, AACSB, AMBA. The Double Degree Programme offers the opportunity to improve specific skills in marketing, consulting, finance and entrepreneurship at Audencia, together with the technological and innovation background of Politecnico di Milano.

# Solvay Brussels School of Economics and Management



Solvay Brussels Schoo Economics & Management

The Solvay Brussels School of Economics and Management (SBS-EM) is the Business School of the Université Libre de Bruxelles, a large multi-cultural university located in the metropolitan area of Brussels and close to the headquarters of the social and political institutions of the European Union. SBS-EM offers high quality education at the undergraduate, postgraduate and executive levels; this is reflected also by international university rankings and accreditations (EQUIS, AMBA).

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# Tsinghua University



Tsinghua University (Beijing) is one of the best universities in China for quality of education, research and service to society. Over the years, it has obtained the highest number of professors, at the national level, who have received awards in academic and scientific fields. Tsinghua University is also considered one of the best universities worldwide. The MSc Double Degree in Management Engineering aims at putting together the exclusive educational resources of each of the two universities, by training a top-level graduate profile, with a degree from both universities, through a strong preparation in the fields of global industrial production and management engineering.

# Tongji University



Tongji University (Shanghai) is one of the oldest and most prestigious institutes of higher education in China. As of today, the university includes different fields of study and it attracts many students, from China and from all over the world.

The university has also developed a strong connection with the industries, which allows it to provide students with the opportunity of real interaction with companies. The Double Degree aims at providing students with tools and resources that are necessary to develop skills in industrial and management engineering.

# OTHER DOUBLE DEGREE PROGRAMMES

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# University of Illinois at Chicago

The Politecnico di Milano's Management Engineering Department offers a Double Degree Program with the **University of** 



Illinois Chicago (UIC), encompassing two distinct tracks:

#### **1. Industrial Engineering Program:**

- **Degrees Awarded**: Master of Science in Management Engineering (Polimi) and Master of Science in Industrial Engineering (UIC).
- **Program Duration**: Minimum of 18 months, comprising two semesters of coursework and one semester dedicated to the final thesis.
- **Study Abroad Requirement**: A mandatory semester abroad during the first semester of the second year.
- Application Process: Interested students must first pass a preselection at Polimi and subsequently apply directly to UIC. Applications are typically submitted in September of the first year.
- **Program Level**: Open exclusively to first-year Master of Science students.
- **Experience Type**: Classified as a Free Mover program, not included in the standard Mobility Call, and does not offer Erasmus-style scholarships.

# 2. Business School Program:

- Degrees Awarded: Master of Science in Management Engineering (Polimi) and Master of Science in Finance or Supply Chain and Operations Management (UIC).
- **Program Duration**: Minimum of 18 months, with two semesters of coursework and an optional third semester for additional courses and thesis work.
- **Study Abroad Requirement**: A mandatory semester abroad during the first semester of the second year.
- Application Process: Similar to the Industrial Engineering track, students must pass a Polimi preselection before applying

directly to UIC, with applications typically submitted in September of the first year.

- **Program Level**: Designed exclusively for first-year Master of Science students.
- **Experience Type**: Also classified as a Free Mover program, not part of the standard Mobility Call, and does not offer Erasmusstyle scholarships.

These programs provide students with valuable international exposure and the opportunity to earn dual degrees, enhancing their academic and professional profiles.

# Programmes Coordinator: Prof. Roberto Cigolini.

Contact Information: For further details, reach out to *international-dig@polimi.it*.

This Double Degree Programme is independent of Polimi's International Mobility Call, meaning it has its own deadlines, no Erasmus-style scholarships, and requires tuition payment at UIC, though at discounted rates.

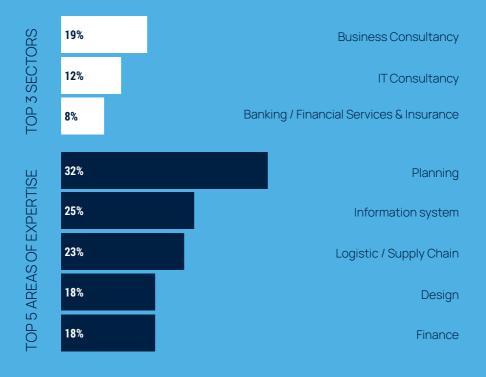
## **Programme Structure**

- Eligibility: Open to MSc in Management Engineering students who have completed their Bachelor's degree before the programme starts.
- **Start**: Spring semester (second semester of the first year).

For more information: <u>https://management-eng.polimi.it/en/</u> international-experience/international-double-degrees/

# PLACEMENT

Emphasizing the warm welcome given by the world of business to this new breed of professionals, graduates from Politecnico di Milano can find employment in several industrial and service companies, in consultancy firms, banks and financial institutions, the public administration and in non-profit organisations.



Source: Career Service Politecnico di Milano, Survey 2024



# **MASTER OF SCIENCE**

98%



Source: Career Service Politecnico di Milano Survey 2024 - Master of Science. The survey is addressed to Msc Degree graduates, a year from their graduation date.

# CONTACTS

ACADEMIC PROGRAMME OFFICE *management-engineering@polimi.it* 

# FROM CENTRALE FS METRO STATION

Take the M2 green underground (towards Assago Milanofiori Forum/ Abbiategrasso), get off at Garibaldi Station (second stop), take the underground urban train (passante) S1 line (towards Saronno) or S2 line (towards Meda-Mariano Comense) or S13 line (towards Bovisa) and get off at the Milano Bovisa Politecnico station (second stop).

#### Estimated journey time: 15 minutes.

## FROM CADORNA FNM METRO STOP

Take the S3 line (towards Saronno) or S4 line (towards Camnago Lentate) or R22 line (towards Varese) and get off at the Milano Bovisa Politecnico station (second stop).

## Estimated journey time: 8 minutes.

# FROM DUOMO METRO STOP

Take the M1 red underground (towards Rho Fiera-Bisceglie), get off at Cadorna station (third stop), go into the train station and take the S3 line (towards Saronno) or S4 line (towards Camnago Lentate) or R22 line (towards Varese) and get off at the Milano Bovisa Politecnico station (second stop).

Estimated journey time: 15 minutes.

www.management-eng.polimi.it www.polimi.it/futuri-studenti

Alternative route: Take the M1 red underground (towards Sesto FS), get off at Porta Venezia Station (third stop), take the underground urban train (passante) S1 line (towards Saronno) or S2 line (towards Meda-Mariano Comense) or S13 line (towards Bovisa) and get off at the Milano Bovisa Politecnico station (fourth stop).

# Estimated journey time: 25 minutes.

