

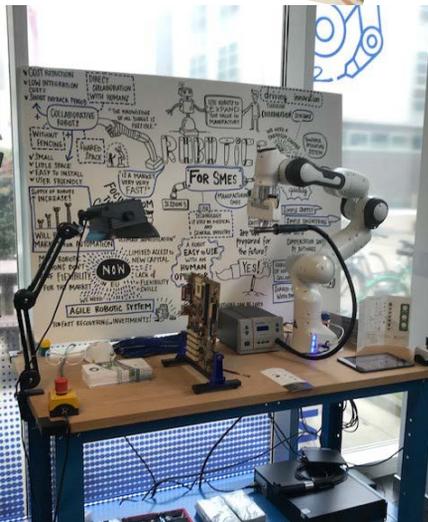


**POLITECNICO**  
MILANO 1863

**SCHOOL OF INDUSTRIAL  
AND INFORMATION ENGINEERING**

*Master of Science Programme in*  
**Management Engineering**

# The World of Management Engineering



# Why choose Management Engineering

An **engineer of change and innovation**: this is the Management Engineer, trained to design and manage systems in which technological variables interact in a complex way with economic and organizational ones. For this reason he has a **multidisciplinary profile** that allows to operate in different sectors and functions within a company.

The Management Engineer understands the fundamental scientific and engineering principles and their application in technologies and knows the context variables, functions, processes and decision-making areas which are fundamental in business and industry. He is therefore able to **design solutions** by applying the engineering approach (learning, reasoning and modeling based on a solid multidisciplinary preparation) to face problems and opportunities.

In addition to design, the Management Engineer can **organize and manage company resources** in an integrated way, and promote innovation in all business processes.

## After Graduation

The transversal skills of a Management Engineer allow him/her to find a job very quickly: **97%** of graduates find an employment within one year from graduation.

### **Industrial fields**

Industrial and service companies, consulting firms, banks and financial institutions, public administration bodies, non-profit organizations.

### **Functions**

Planning and management of production and logistics systems, strategic planning, business organization and management, economics, planning and management of technology and innovation, internationalization processes, management control, corporate and market finance, business management in regulated sectors and network services, planning and management of big projects, Internet applications and ICT management.

# Programme Structure

The Master of Science in Management Engineering provides a **first year** of basic training and a common body of knowledge that characterizes the management engineer, while the second year is organized into **nine tracks (Streams)** dealing with different specialized disciplines that allow to customize the programme according to personal attitudes and expectations.

At the end of each stream, students have the opportunity to engage in special projects (**practice-based labs**) developed in collaboration with different companies which simulate the working environment and allow to tackle real challenges.

The programme is entirely delivered in **English**, to allow an international experience and exchange among students of different countries.

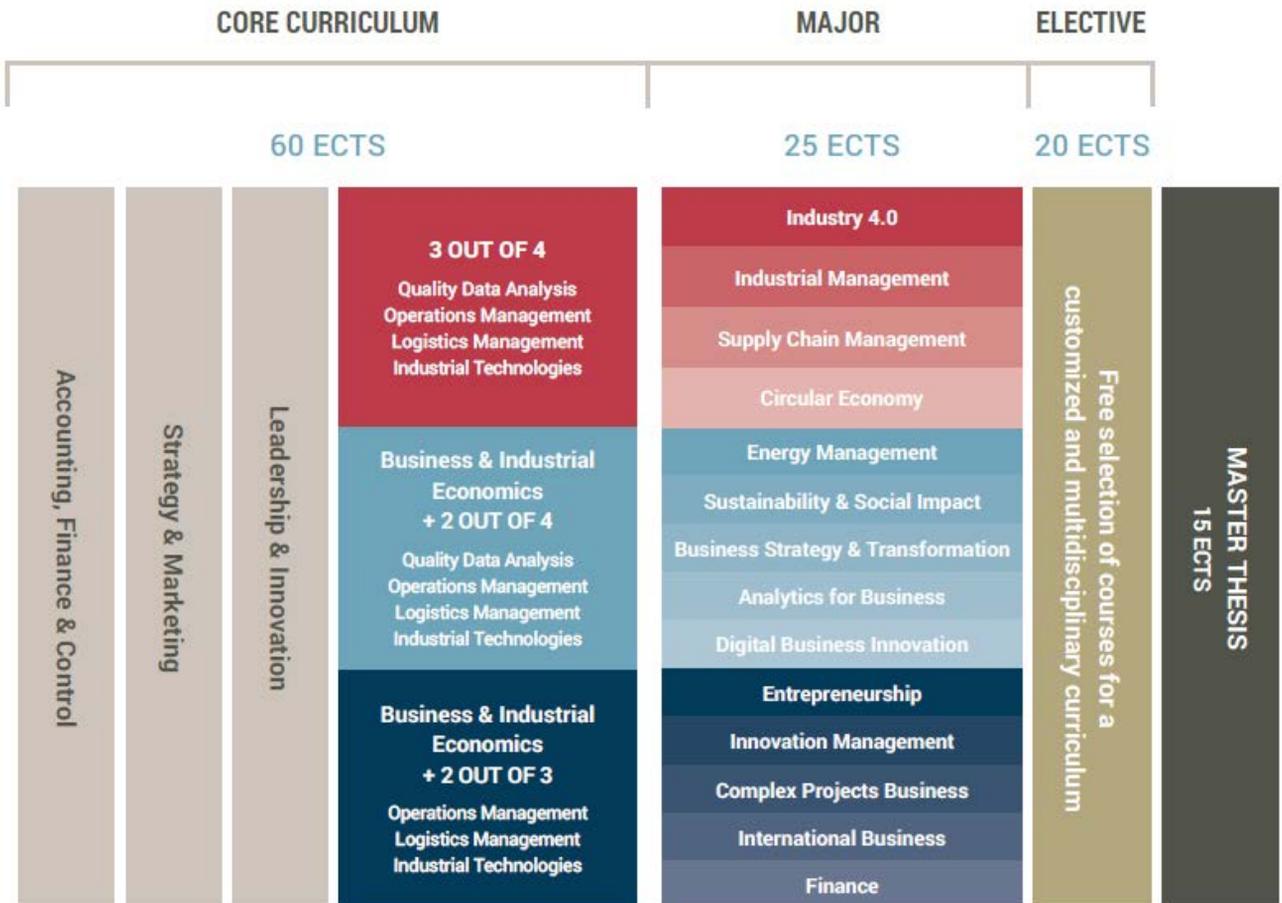
The programme also provides a wide choice of exchange experiences and international double degrees.

# Mentorship Programme

The objective of the Mentorship Programme is to offer to some selected Master of Science students a **high value added experience** by participating in some activities that will foster their professional and personal development and academic career.

The Programme is for students enrolled at the **second year** of the Master of Science.

# MSc in Management Engineering overall structure



The first year provides a common knowledge basis that constitutes the foundation of the Master of Science programme.

The second year is dedicated to developing vertical competencies within **14 majors** that cover a diversified range of disciplines. Each major is constituted by 25 ECTS that are specific of 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.



## First year

Courses	Sem	ECTS	Group ECTS
Accounting, Finance & Control	1	10	10
Strategy & Marketing	1	10	10
Leadership & Innovation	2	10	10
Choice from Group I40 IND SC CIE	-	-	30
Choice from Group ENM SSI BST AFB DBI	-	-	
Choice from Group ENT INN CPB INT FI	-	-	



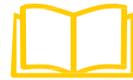
## Second year

Courses	Sem	ECTS	Group ECTS
Smart Manufacturing Lab	2	10	10
Digital Manufacturing	1	5	10
Industrial Automation and Robotics	1	5	
Manufacturing Systems Engineering I	1	5	5
Additive Manufacturing	1	5	
Choice from Group I40 FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Industrial Management Lab and Toolbox	1	15	15
Industrial Management Lab and Toolbox	2	15	
Smart Maintenance Management	1	5	5
Operations Risk Management and Resilience	1	5	
Industrial Asset Management	1	5	5
Quality Management	1	5	
Agile Project Management	1	5	
Choice from Group IND FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Advanced Supply Chain Planning Lab	2	10	10
Supplier Relationship Management Lab	2	10	
Supply Chain Management	1	5	5
Purchasing and Supply Management	1	5	10
Global Supply Chain Planning	1	5	
International Distribution	2	5	
Supply Chain Innovation	2	5	
Global Supply Chains and Networks	1	5	
Green Logistics	2	5	
Choice from Group SC FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Circular Economy Lab	2	10	10
Circular Industrial Systems	1	5	15
Circular Economy Business Models	1	5	
Sustainable Manufacturing	1	5	
Green Logistics	2	5	
Choice from Group CIE FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Energy Management Lab	2	10	10
Management of Energy	1	5	5
Fundamentals of Energy Technologies	1	5	10
Circular Economy Business Models	1	5	
Technology Risk Governance	1	5	
Strategic Innovation	1	5	
Diritto dell'Energia	2	5	
Choice from Group ENM FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Sustainable and Social Innovation Lab	1	10	10
Management for Sustainability and Social Impact	1	5	10
Collaborative Innovation for Sustainability and Impact	1	5	
Sustainable Manufacturing	1	5	5
Innovation in Health and Social Care	1	5	
Policy Design and Evaluation	2	5	
Global Environmental Challenges	2	5	
Choice from Group SSI FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Business Design and Transformation Lab	2	10	10
Strategic Innovation	1	5	5
Agile Innovation	2	5	10
Corporate Finance	1	5	
Design Thinking for Business	1	5	
Digital Business	2	5	
New Forms of Organization	2	5	
Choice from Group BST FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Analytics for Business Lab	2	10	10
Applied Statistics	1	5	15
Marketing Analytics	1	5	
Advanced Performance Measurement	1	5	
Choice from Group AFB FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Digital Business Lab	2	10	10
Digital Business	2	5	5
Digital Manufacturing	1	5	10
New Forms of Organization	1	5	
Omnichannel Marketing Management	1	5	
Economics of Innovation and New Technologies	1	5	
Agile Innovation	2	5	
Machine Learning (Market & Technological Forecasting)	1	5	
Digital Technology	2	5	
Choice from Group DBI FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Entrepreneurship Lab	A	10	10
Digital Business	2	5	15
Entrepreneurship Economics	1	5	
Entrepreneurial Finance	1	5	
Patents and Intellectual Property Management	2	5	
Family Business	1	5	
Design Thinking for Business	1	5	
Choice from Group ENT FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Innovation in Action Lab	2	10	10
Economics of Innovation and New Technologies	1	5	5
Agile Project Management	1	5	10
Patents and Intellectual Property Management	2	5	
Product Life Cycle Management	2	5	
Corporate Finance	1	5	
Digital Business	1	5	
Design Thinking for Business	1	5	
Choice from Group INN FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Complex Projects Lab	2	10	10
Project Management	2	5	5
Financing Complex Projects	2	5	10
Knowledge Management in Infrastructure Projects	2	5	
International Markets and European Institutions	1	5	
Industrial Asset Management	1	5	
Technology Risk Governance	1	5	
Choice from Group CPB FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Invest in Foreign Markets Lab	2	10	10
Economics and Management of Multinational Enterprises	1	5	18
International Economics I	1	5	
International Economics II	1	5	
International Markets and European Institutions	1	5	
Development Economics	2	8	
Choice from Group INT FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



## Second year

Courses	Sem	ECTS	Group ECTS
Finance Lab	2	10	10
Corporate Finance	1	5	15
Macroeconomics of Finance	1	5	
Financial Markets and Institutions	1	5	
Choice from Group FI FREE	-	-	21
Choice from Group GENERAL FREE	-	-	
FINAL THESIS	1	15	15
FINAL THESIS	2	15	



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