POLITECNICO
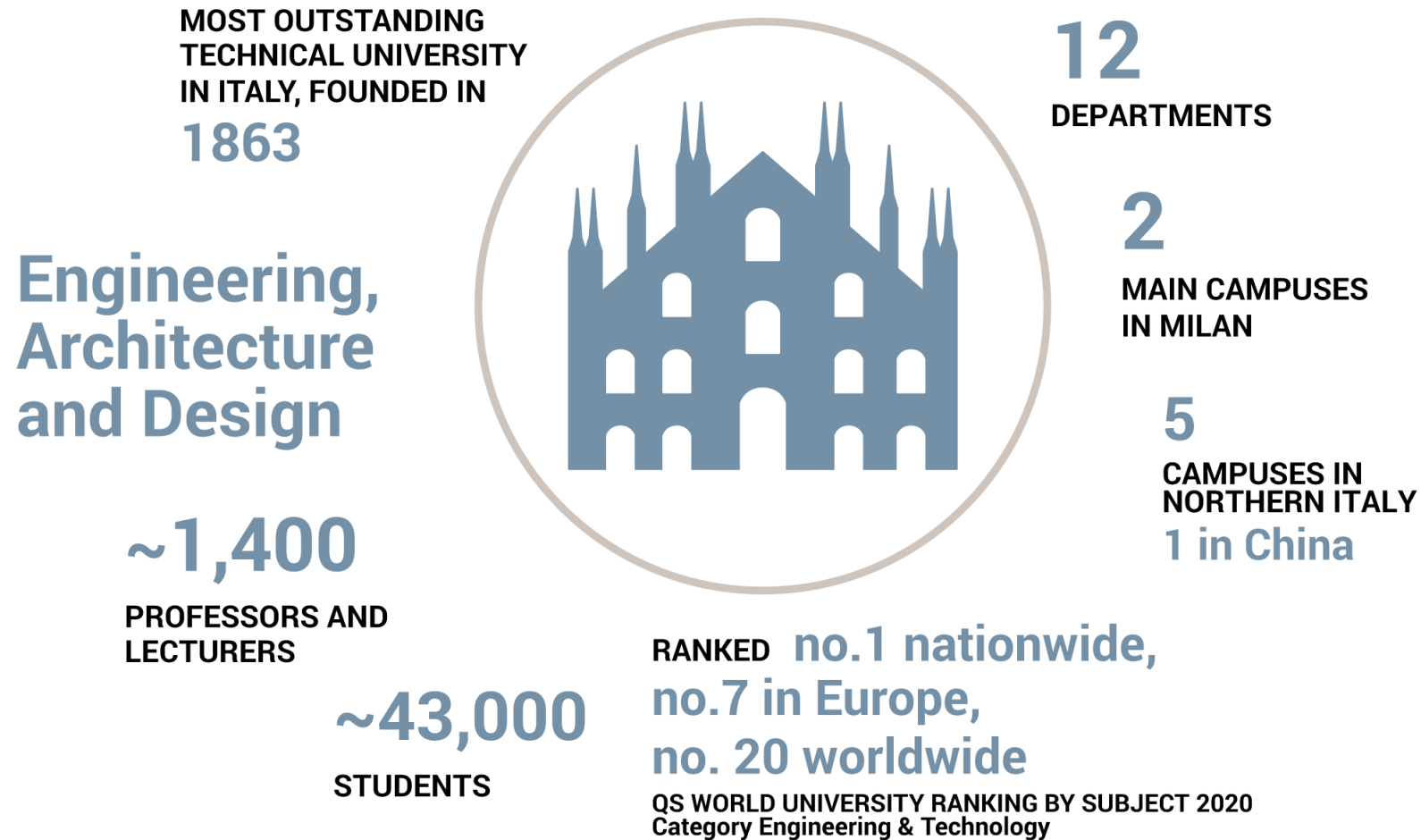## MILANO 1863

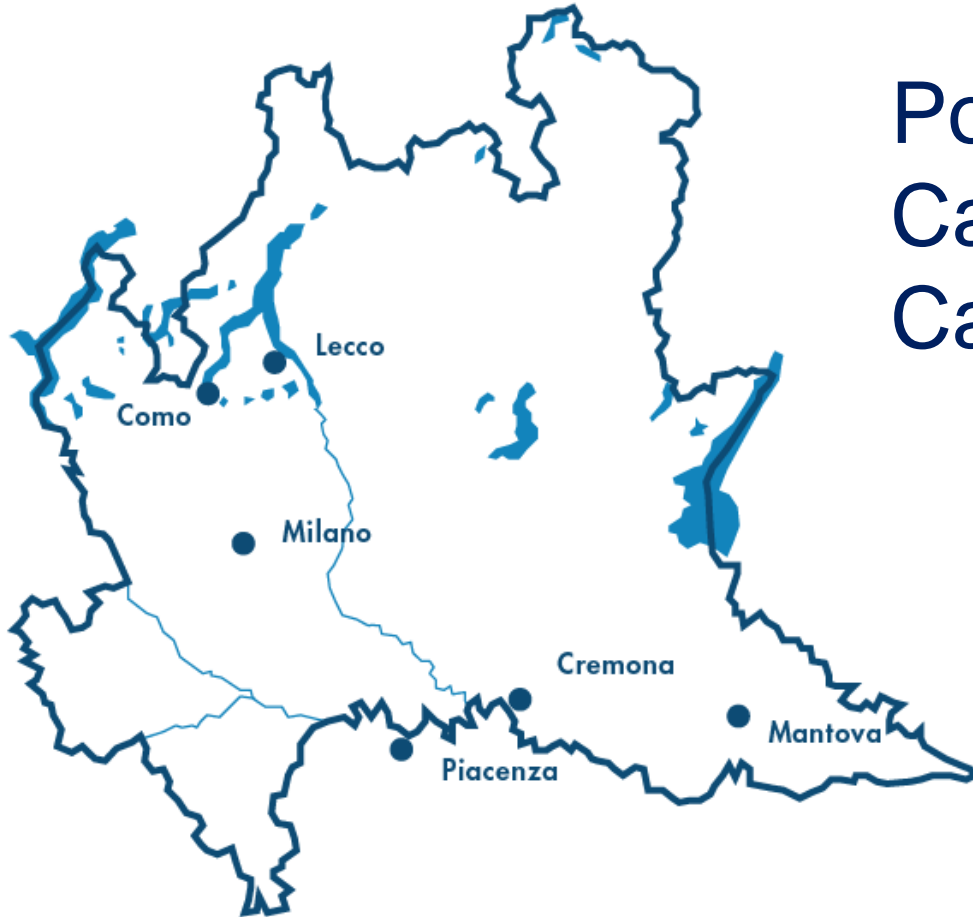# Politecnico di Milano

The leading University in Italy for Architecture, Design and Engineering

Politecnico di Milano

MOST OUTSTANDING TECHNICAL UNIVERSITY IN ITALY, FOUNDED IN

1863

Engineering, Architecture and Design

~1,400

PROFESSORS AND LECTURERS

~43,000

STUDENTS

12
DEPARTMENTS

2

MAIN CAMPUSES IN MILAN

5

CAMPUSES IN NORTHERN ITALY
1 in China

RANKED **no.1 nationwide, no.7 in Europe, no. 20 worldwide**

QS WORLD UNIVERSITY RANKING BY SUBJECT 2020
Category Engineering & Technology

The University Premises

Politecnico di Milano has 2 main Campuses in the city of Milan and 5 Campuses located in Northern Italy

Politecnico di Milano QS Rankings by Subject 2019/20

First in Italy in 10 research areas:

Architecture & Built Environment; Art & Design; Computer Science & Information Systems; Chemical Engineering; Civil & Structural Engineering; Electrical & Electronic Engineering; Mechanical, Aeronautical & Manufacturing Engineering; Environmental Sciences; Materials Science; Mathematics

In the top 10 European universities in 7 research areas:

Architecture & Built Environment; Art & Design; Computer Science & Information Systems; Chemical Engineering; Civil & Structural Engineering; Electrical & Electronic Engineering; Mechanical, Aeronautical & Manufacturing Engineering

In the top 50 universities in the World in 7 research areas:

Architecture & Built Environment; Art & Design; Computer Science & Information Systems; Chemical Engineering; Civil & Structural Engineering; Electrical & Electronic Engineering; Mechanical, Aeronautical & Manufacturing Engineering
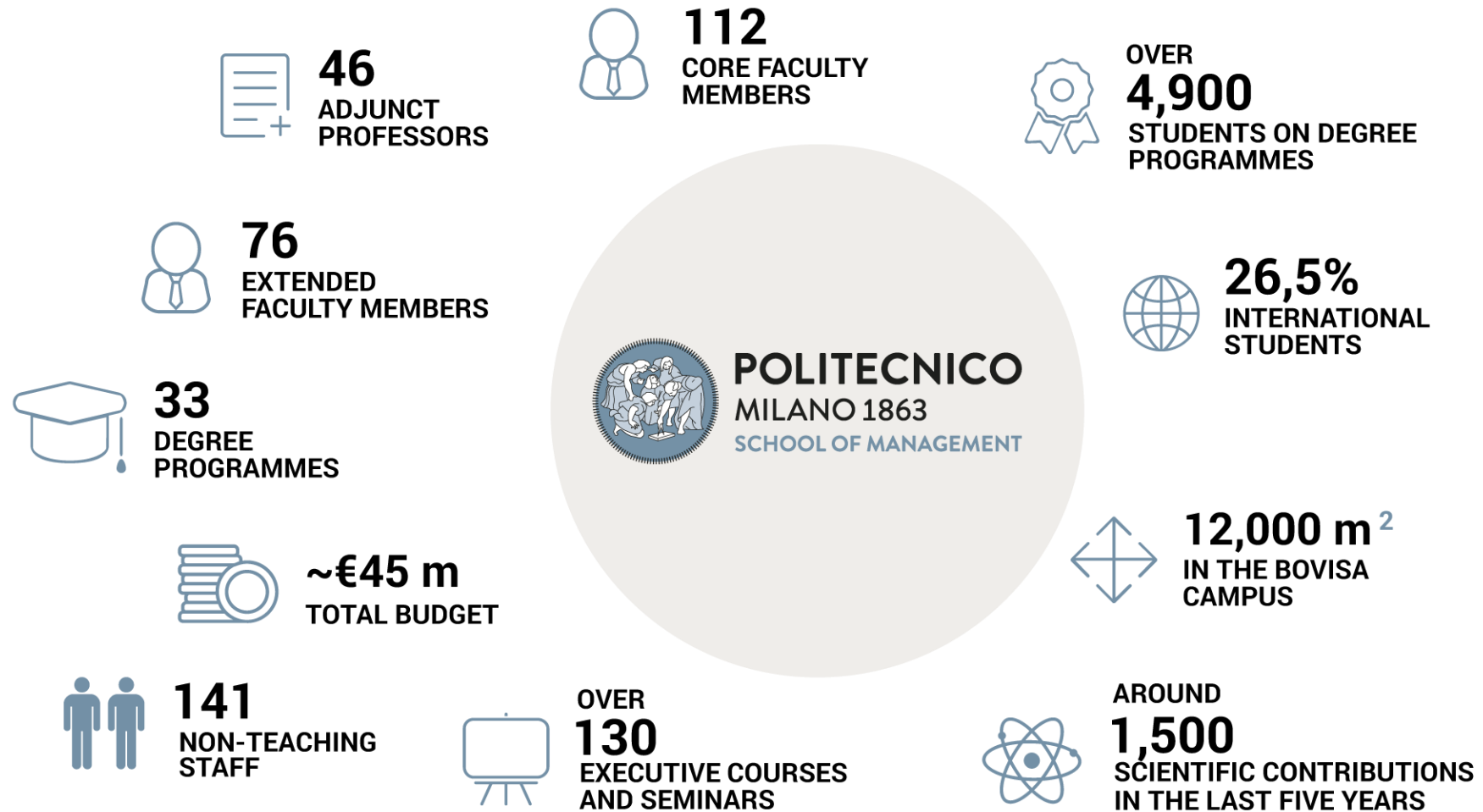
POLITECNICO MILANO 1863

The School of Management (SoM)

The School of Management

46 ADJUNCT PROFESSORS

112 CORE FACULTY MEMBERS

OVER 4,900 STUDENTS ON DEGREE PROGRAMMES

76 EXTENDED FACULTY MEMBERS

26,5% INTERNATIONAL STUDENTS

33 DEGREE PROGRAMMES

POLITECNICO MILANO 1863 SCHOOL OF MANAGEMENT

~€45 m TOTAL BUDGET

12,000 m^2 IN THE BOVISA CAMPUS

141 NON-TEACHING STAFF

OVER 130 EXECUTIVE COURSES AND SEMINARS

AROUND 1,500 SCIENTIFIC CONTRIBUTIONS IN THE LAST FIVE YEARS

The SoM Vision and Mission

Vision

We envision a world where responsible leaders are driven by the search for collective benefit empowered by technological enlightenment.

Mission

The mission of the School of Management (SoM) is to contribute to the collective good through a critical understanding of the opportunities offered by innovation. This mission is accomplished by creating and sharing knowledge through:
- High-quality education
- High-quality research
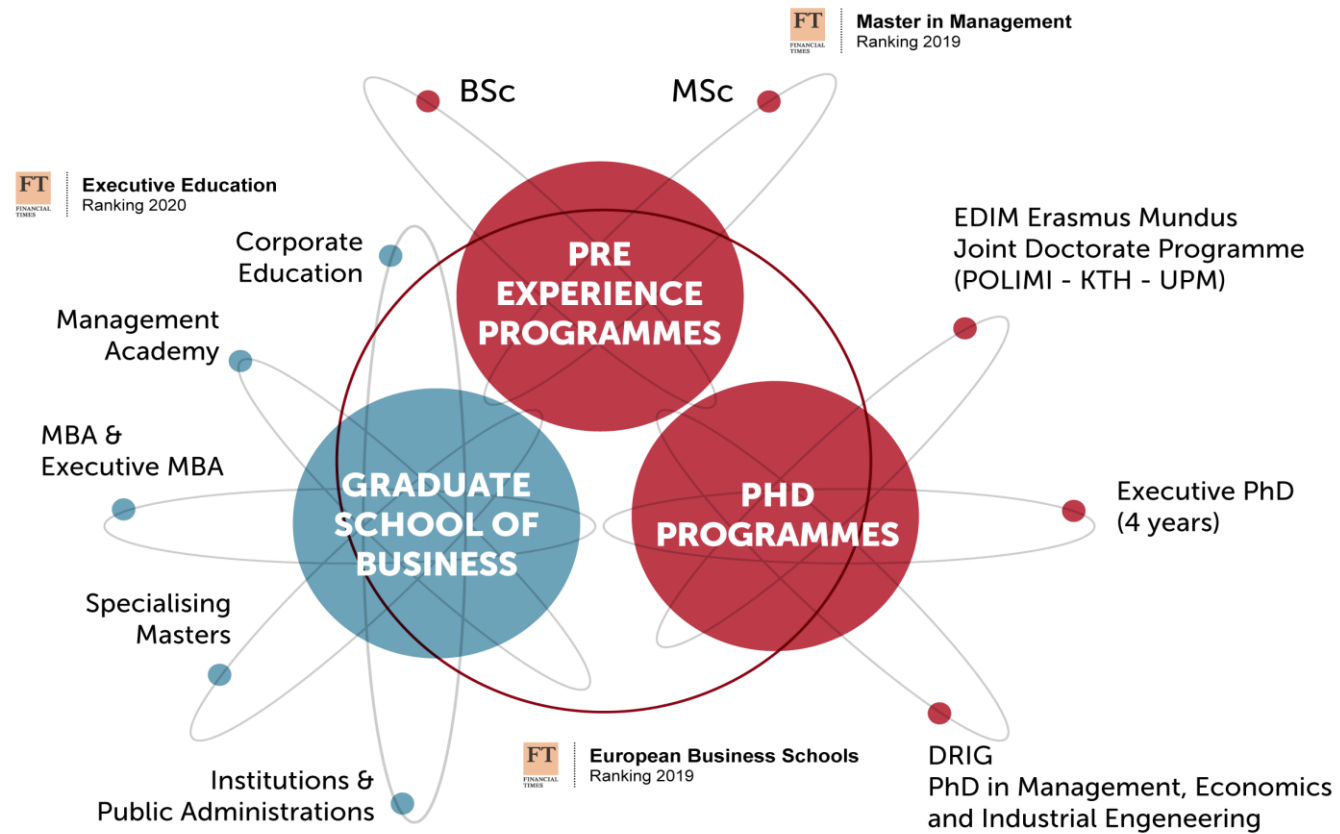- Engagement with the community

Accreditations, Rankings & Memberships

MIP - Politecnico di Milano School of Business

- **Not-for-Profit Consortium Limited Company** established in **1979**

- **Companies on board since its foundation**

- Structure **today**:

❑ Politecnico di Milano **40%**

❑ Assolombarda **60%**
    (Entrepreneurial Association) &
    All other Companies

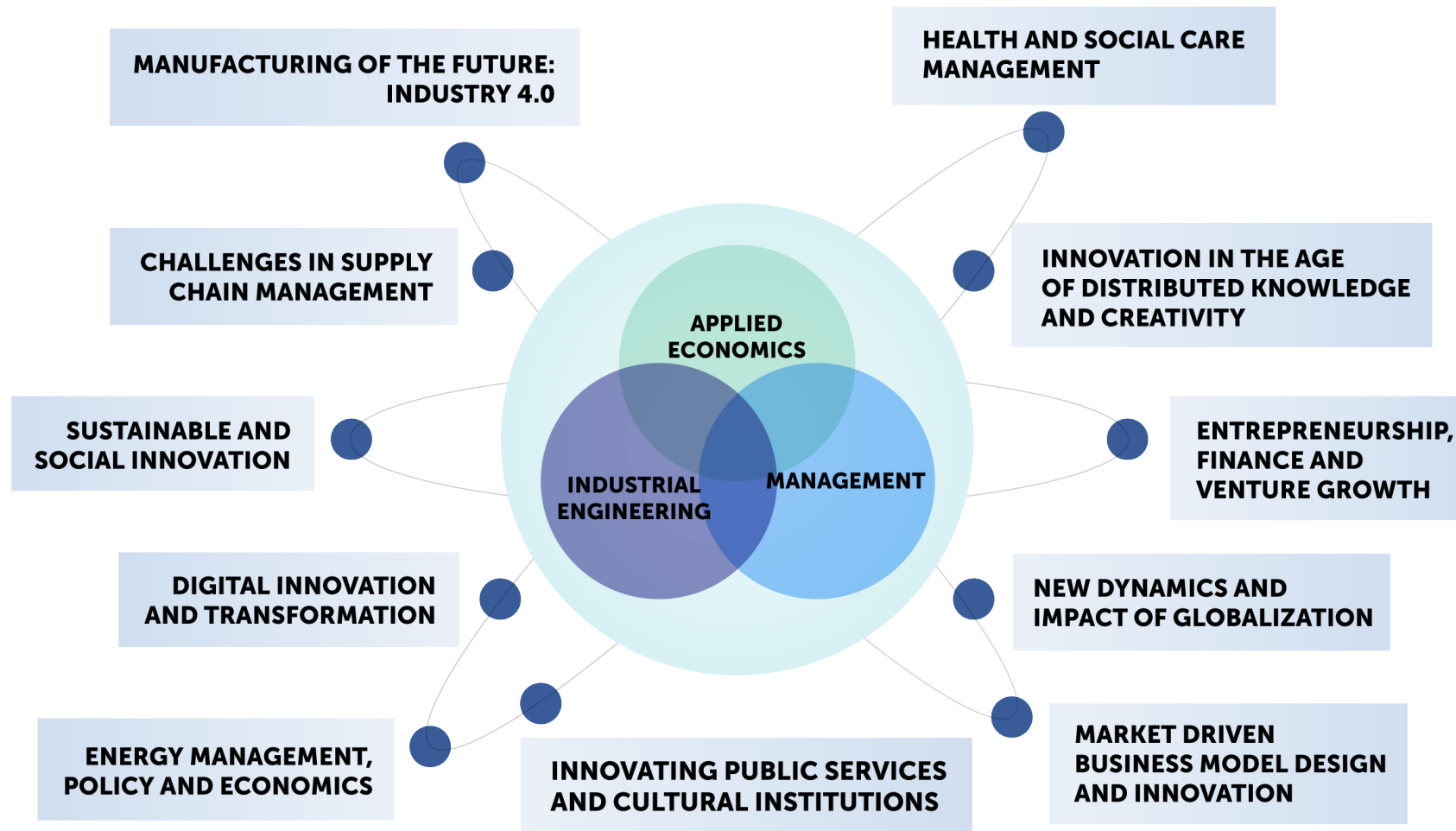# The SoM Research: Areas and Lines

The SoM Research Strategy focuses on **three main areas** of research:

➤ **Management**

➤ **Applied Economics**

➤ **Industrial Engineering**

Around these research topics, the School organizes **multi-disciplinary research activities** called **research lines**.
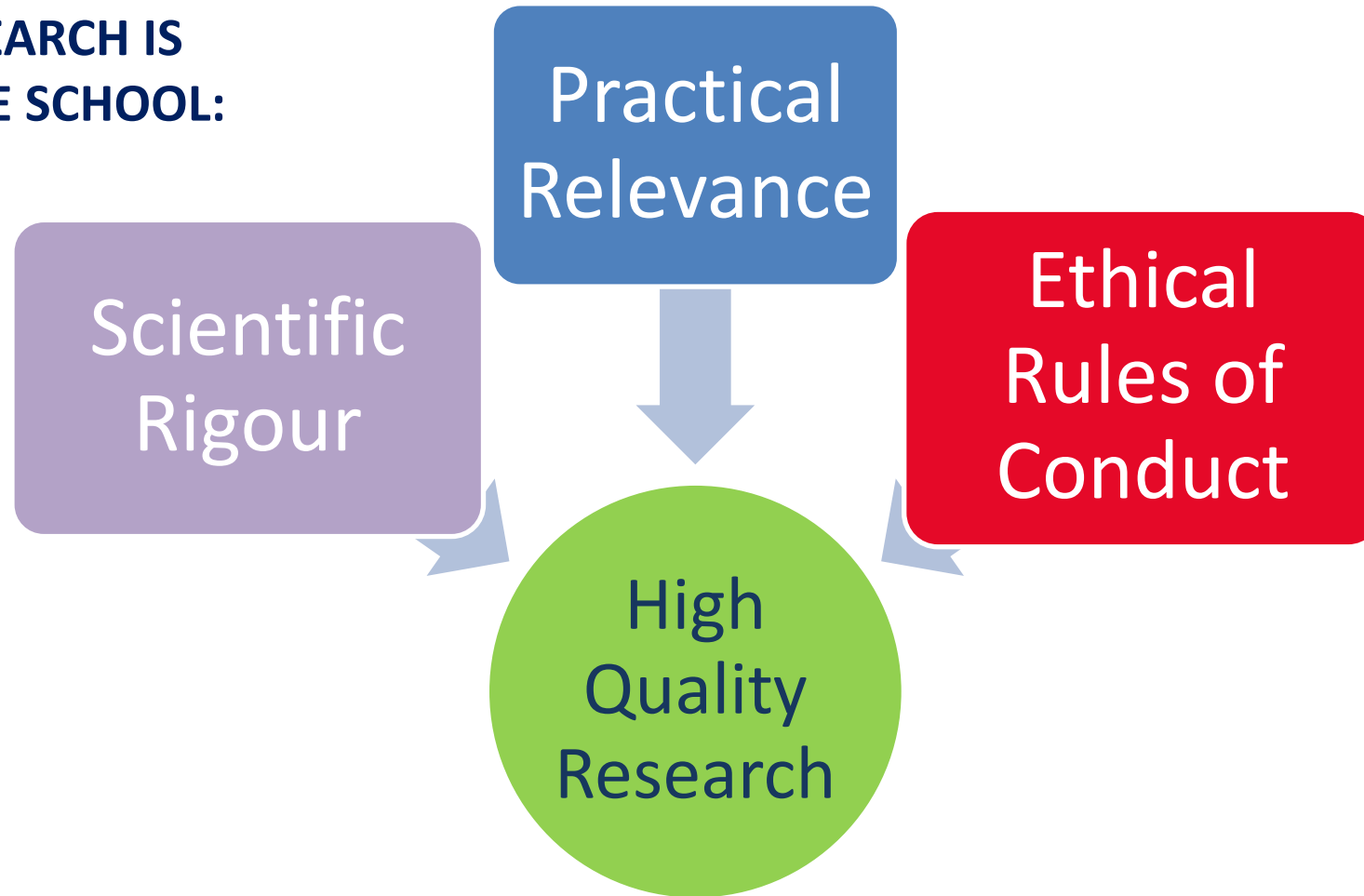
These address **emerging scientifically challenging issues of great practical and societal relevance**

The SoM Research: Areas and Lines

MANUFACTURING OF THE FUTURE: INDUSTRY 4.0

HEALTH AND SOCIAL CARE MANAGEMENT

CHALLENGES IN SUPPLY CHAIN MANAGEMENT

INNOVATION IN THE AGE OF DISTRIBUTED KNOWLEDGE AND CREATIVITY

SUSTAINABLE AND SOCIAL INNOVATION

ENTREPRENEURSHIP, FINANCE AND VENTURE GROWTH

DIGITAL INNOVATION AND TRANSFORMATION

NEW DYNAMICS AND IMPACT OF GLOBALIZATION

ENERGY MANAGEMENT, POLICY AND ECONOMICS

INNOVATING PUBLIC SERVICES AND CULTURAL INSTITUTIONS

MARKET DRIVEN BUSINESS MODEL DESIGN AND INNOVATION

APPLIED ECONOMICS

INDUSTRIAL ENGINEERING

MANAGEMENT

POLITECNICO MILANO 1863

The SoM Approach to Research

**HIGH-QUALITY RESEARCH IS
A PRIORITY FOR THE SCHOOL:**

Practical Relevance

Scientific Rigour

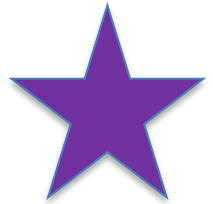Ethical Rules of Conduct

High Quality Research
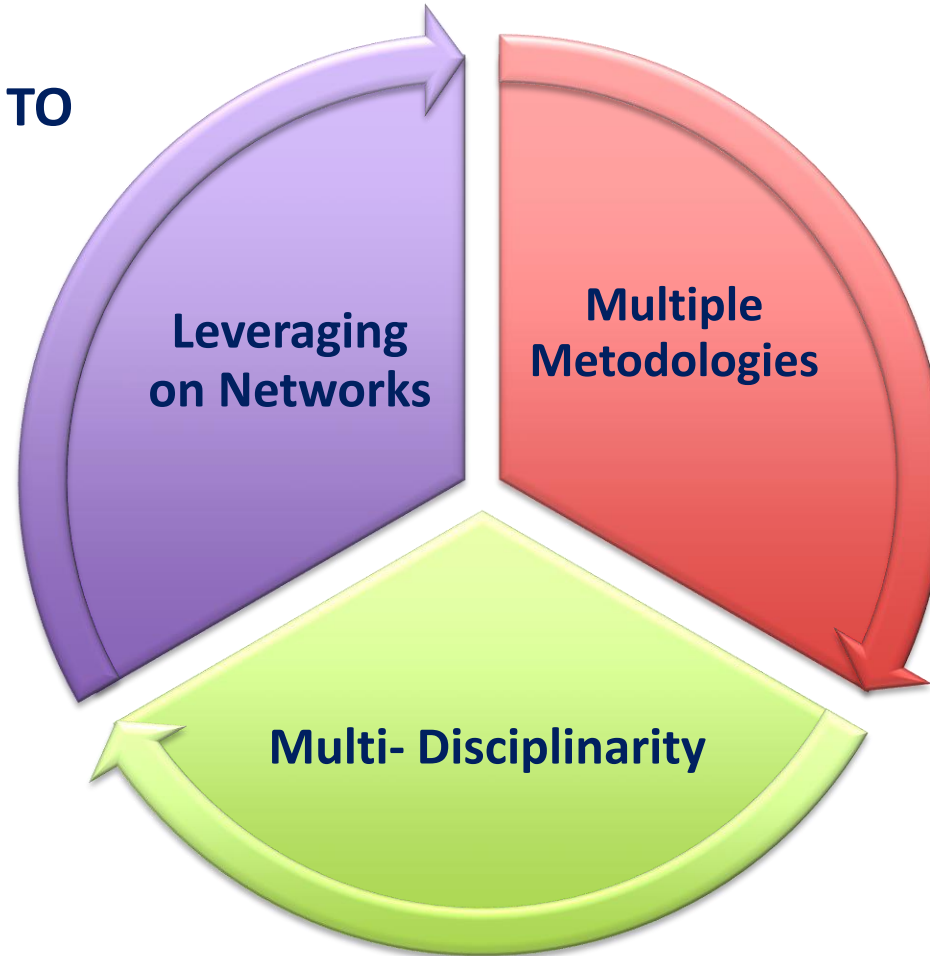
RESEARCH PLAYS A KEY ROLE IN:
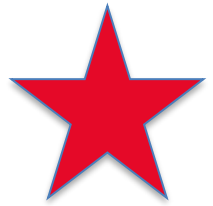
⭐ Generating new knowledge

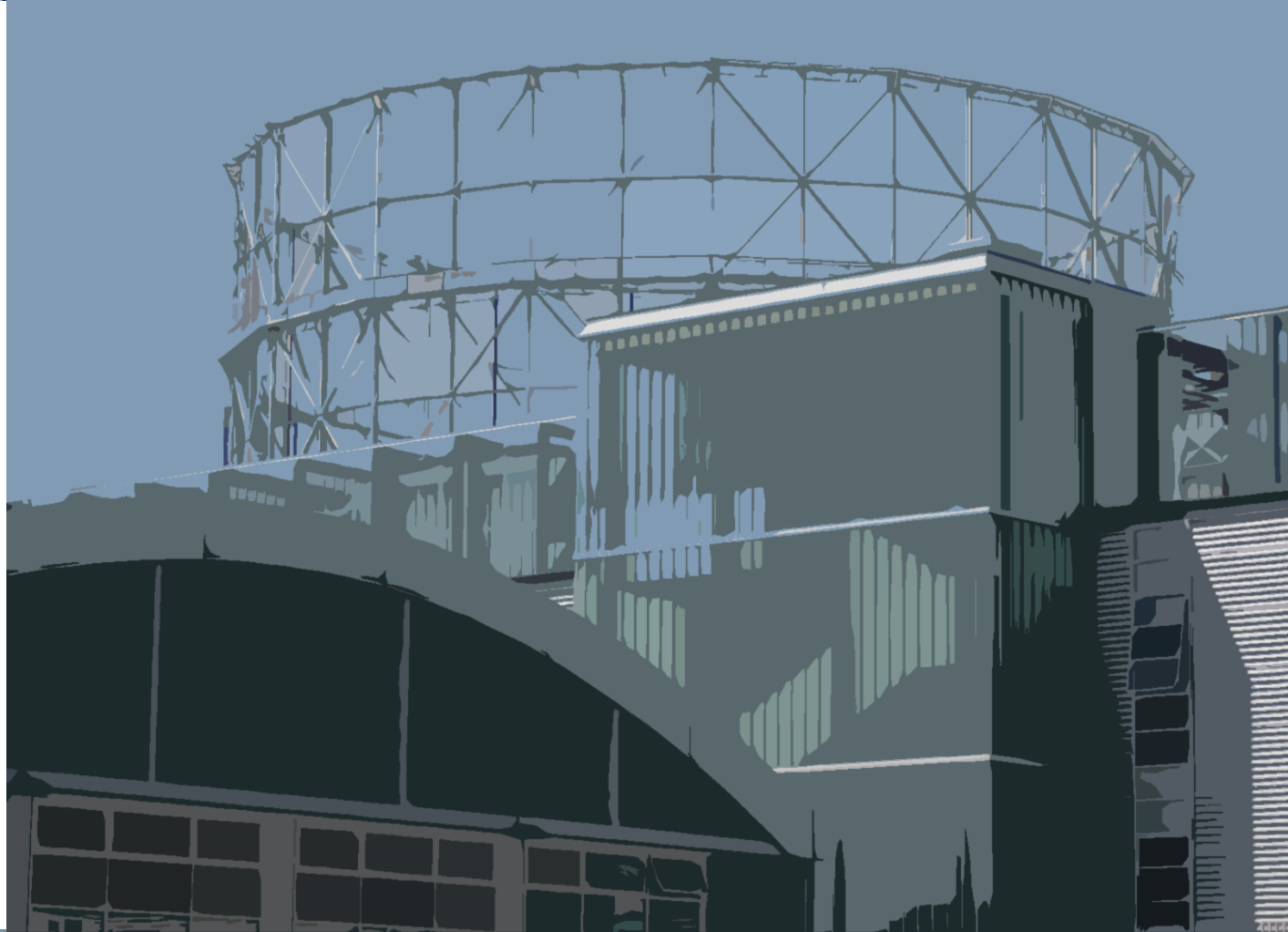⭐ Enhancing the level of teaching

⭐ Establishing effective relationships with the corporate world, policy-makers & society

Physiology, Emotion and Experience LAB

Objective:

Pheel combines the analysis of biological and physiological signals of the individual, expert evaluation and marketing skills to study in depth individual behaviours and reactions

Infrastructure:

A Lab equipped with:

Eye movement detectors (fixed and on the move), Electroencephalograph, Wearable of detection of heart rate and power, skin impedance, frequency and respiratory power, Detector of facial micro-expressions.

www.pheel.polimi.it

POLITECNICO MILANO 1863

SoM Research Labs: IoT (Internet of Things)

The Lab is dedicated to **applied research** and **technological transfer** towards companies on topics revolving around the **Internet of Things (IoT)** paradigm, tackling both the underlying technology as well as emerging use cases and new business models.

It focuses on the **research and design of complex IoT systems**, serving as proving grounds for researchers and students, as well as being an **enabling asset for companies**, which are accompanied in their **evolution towards the IoT/connected model**.
Connected Product, Industrial IoT/Smart Manufacturing, Servitization, are just some of the focus areas.

www.iotlab/polimi.it

SoM Research Labs: Industry 4.0

I4.0 LAB is a **technology infrastructure** where research, development, deployment and testing on **Smart Factory themes**, sustainability of advanced manufacturing processes and relationship between all stages of the life cycle of both products and the factory are possible in an **open, hands-on environment** implementing the **most advanced digital technologies.**

Researchers and industry representatives collaborate in order to support the **digital transformation** of the **Italian industry** towards its global competitiveness.

The research covers various areas, such as: process energy efficiency, optimization, modelling, simulation; human/machine interaction utilizing VR/AR (virtual and augmented reality); new technologies adoption as cloud/fog computing, blockchain, machine learning, 5G, etc.

www.industry40lab.org

Digital Innovation Observatories

Digital Innovation Observatories

Founded **to raise cultural awareness** in all the main areas of **digital innovation**

They provide **an expert point of reference**, integrating work in **research, knowledge and communication**

Purpose: **produce and spread knowledge** in regards to digital technology opportunities and to **impact** on companies, public authorities, and citizens

Digital Innovation Observatories: an Overview

DIGITAL TRANSFORMATION

Cross-analysis of the digital innovation processes that are transforming Italy

- Design Thinking for Business
- Digital Agenda
- Digital Transformation Academy
- Hi-tech Startups
- Startup Intelligence

DIGITAL SOLUTIONS

In-depth studies on specific fields of application and infrastructure for new digital technology

- Artificial Intelligence
- B2c e-Commerce
- Big Data Analytics & Business Intelligence
- Blockchain & Distributed Ledger
- Cloud Transformation
- Electronic Invoicing & B2b E-Commerce
- Information Security & Privacy
- Internet of Things
- Mobile B2c Strategy
- Mobile Payment & Commerce
- Multichannel
- Omnichannel Customer Experience
- Planning & PLM Management
- Smart Working

VERTICALS

Digital innovation analysed within specific sectors or processes

- Cloud in the Public Sector
- Contract Logistics "Gino Marchet"
- Digital Innovation in Healthcare; in Heritage & Culture; in Retail; in Sport Industry; in Tourism
- e-Government
- Export
- Fintech & Insurtech
- Food Sustainability
- HR Innovation Practice
- Industry 4.0
- Internet Media
- Kids & Toys
- Mobile Banking
- Online Gaming
- Professionals & Digital Innovation
- Smart Agrifood
- Supply Chain Finance
- Tech Company – ICT Channel Innovation

Digital Innovation Observatories: The Key Numbers

200 PUBLICATIONS

The most complete collection of analyses, data and conceptual frameworks on digital innovation to assist in decisions crucial for a company's success.

200 LIVE STREAM WORKSHOPS WEBINARS AND CONFERENCES

Analysts and experts explore key topics of digital innovation

400 PARTNERS AND SPONSORS

Research at the Observatories for Digital Innovation is supported by the most important offer-side companies

150.000 PROFESSIONALS

Managers and C-level executives are following the Observatories' work and the research findings

POLITECNICO MILANO 1863

Digital Innovation Observatories: What they do

RESEARCH

100 professors, researchers and analysts working in **40** Observatories to address key matters of **digital innovation** in companies and public authorities.

KNOWLEDGE

The point of reference for professionals wishing to remain up to date on digital innovation. A **single source of information**, data and knowledge based on experts' publications, webinars and workshops, distributed over a **multi-media interactive platform**

Digital Innovation Observatories: What they do

COMMUNICATION

The Observatories spread **good practice**, experience and a **culture** of digital innovation through conventions, media and publications, issuing over **5.000** press releases and articles, and holding **200 public events** every year.
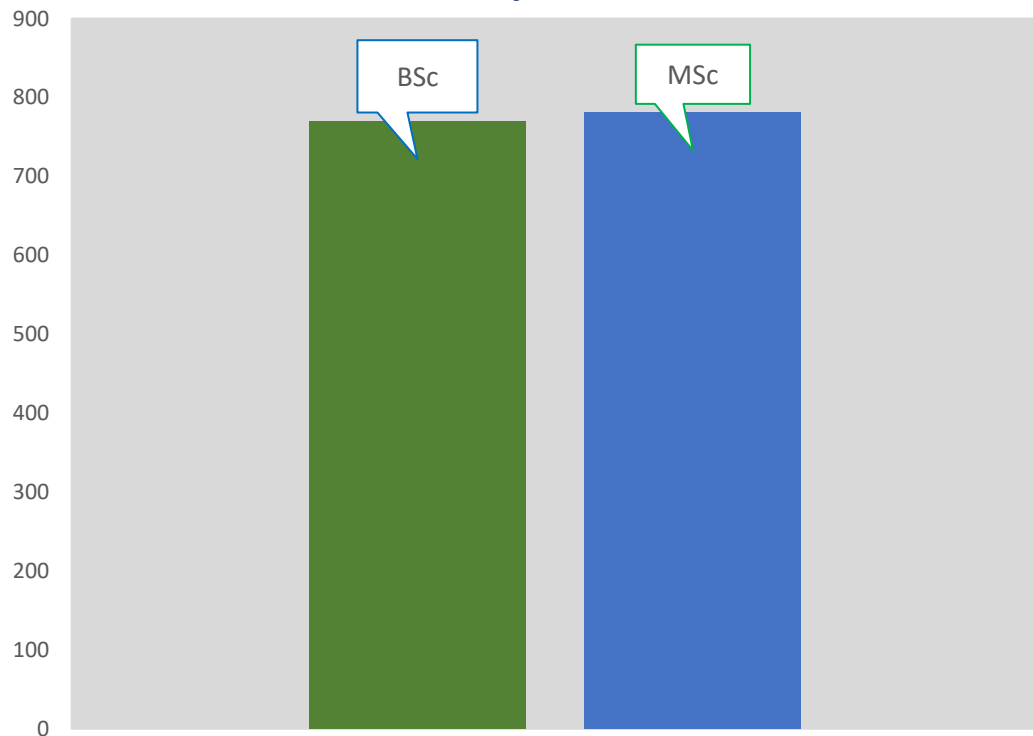
NETWORKING

The Observatories gather together **a wider community** of offer-side and demand-side decision-makers and institutions, developing solid relationships and working together to help **spread digital innovation**.
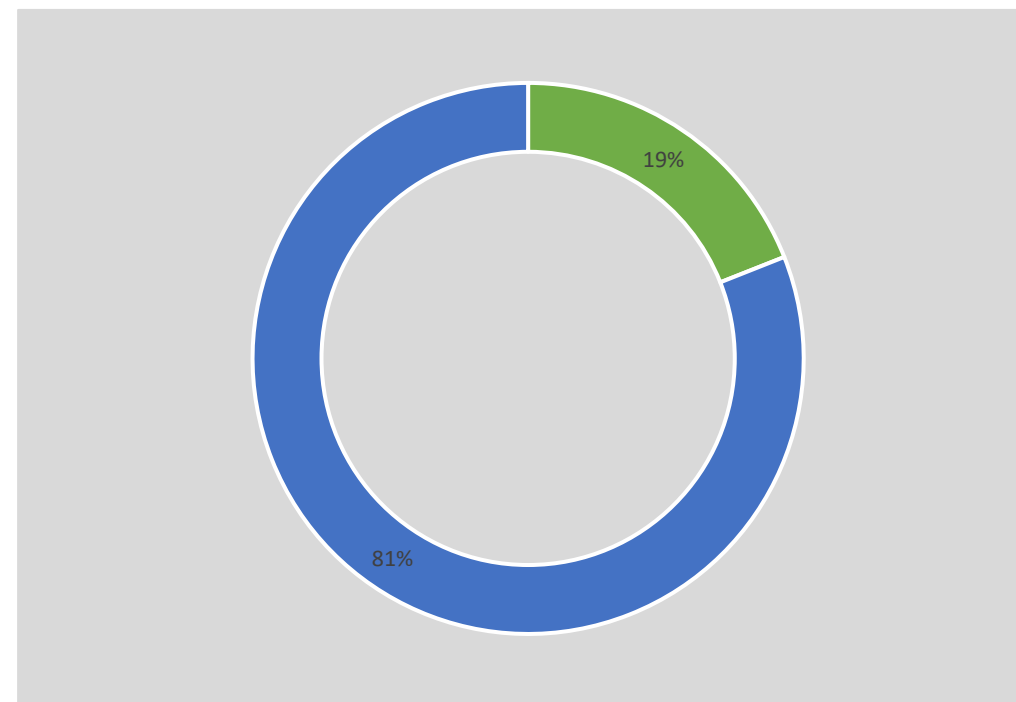
Bachelor & Master of Science in Management Engineering

ME Degree Incoming students AY 2018/19

BSc
MSc

International Students - MSc Degree AY 2018/2019

19%

81%

POLITECNICO MILANO 1863

Bachelor of Science in Management Engineering

- ✓ BSc is a **3 year** (180 ECTS) degree

- ✓ Taught entirely in **Italian**

- ✓ A full course load is 30 ECTS/Sem

- ✓ Courses are mostly worth 5-10 ECTS

- ✓ **Exchange students** at the BSc level can enroll in MSc level courses
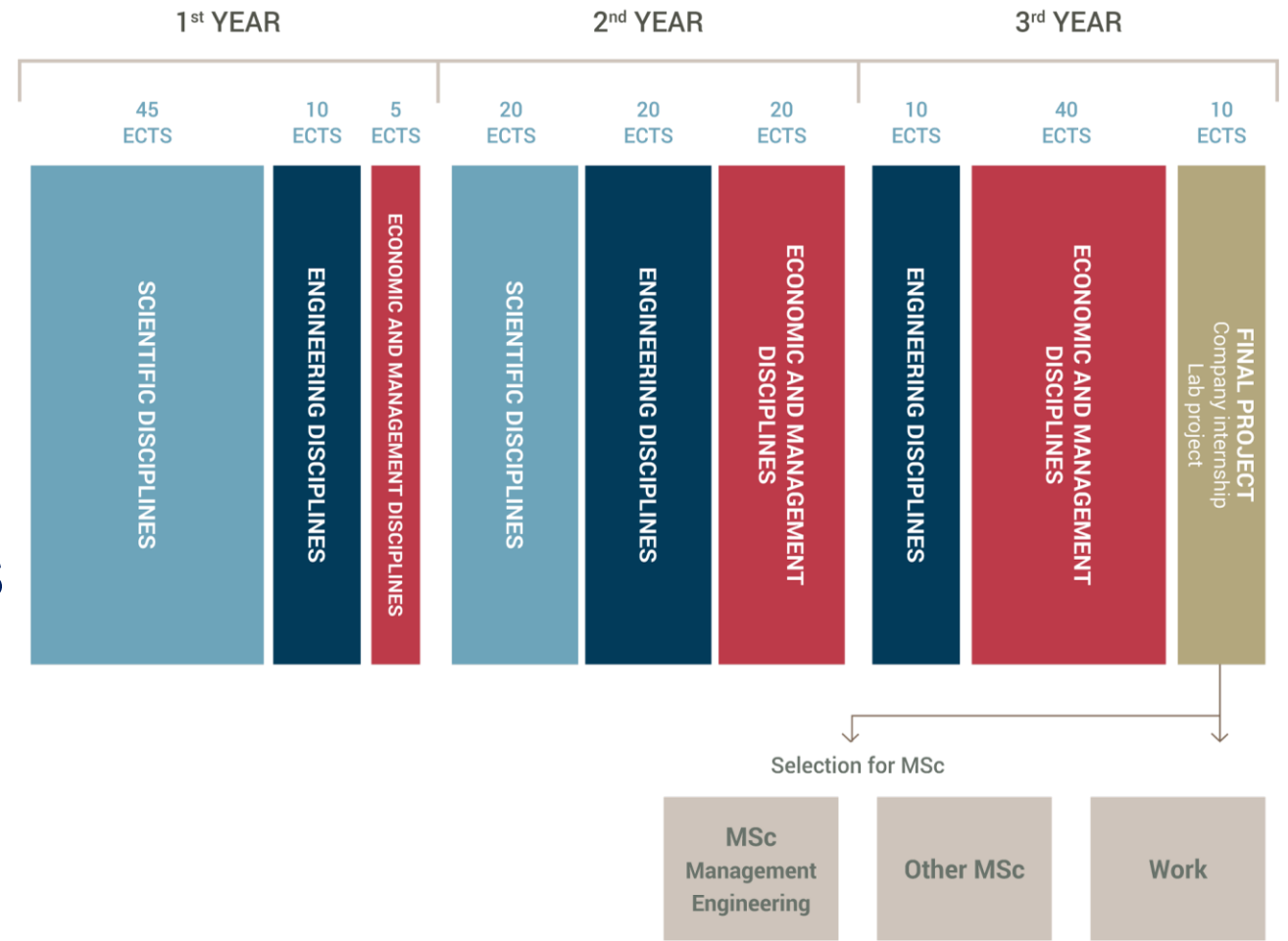
Master of Science in Management Engineering

- ✓ MSc is a **two year** degree,**120 ECTS** credits

- ✓ MSc in Management Engineering is taught in **English**

- ✓ Courses are mostly worth 5-10 ECTS credits

- ✓ **First year** focuses on building a **common body of knowledge** that characterizes the Management Engineer

- ✓ During the **second year** students select a **Concentration**

MSc in Management Engineering overall structure

First year focuses on building a common body of knowledge that characterizes the management engineer
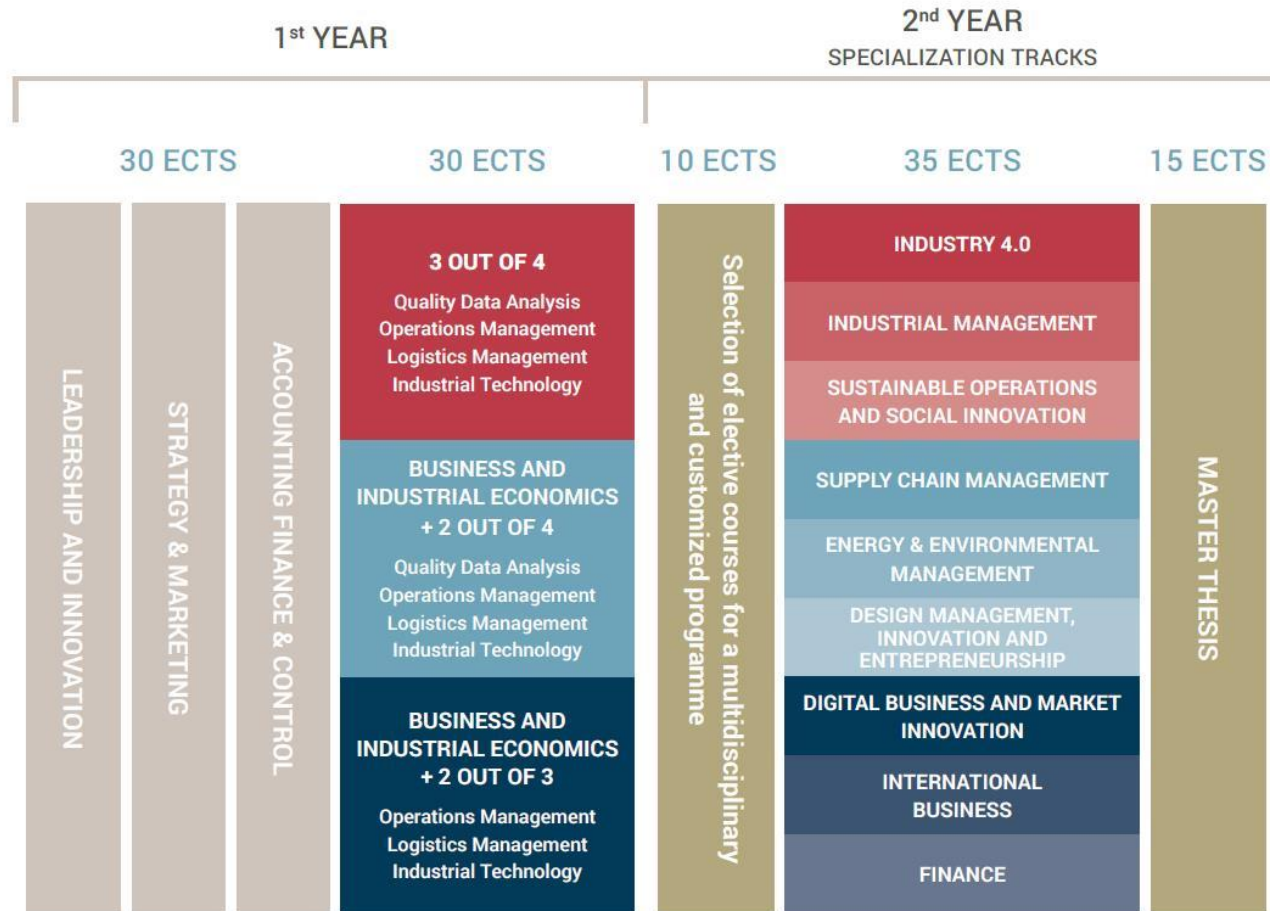
Second year is dedicated to developing vertical competencies within specific streams

Every stream ends with a practice-based lab

First Year of the Master of Science in ME

Acc.ting, Fin. & Control
- **Acc.ting, Fin. & Control**
- **Strategy & Marketing**
- **Leadership & Innovation**

30 ECTS CREDITS

+

Quality Data Analysis/ Operations Management/ Logistics Management/ Industrial Techologies

3 OUT OF 4 COURSES (30 ECTS CREDITS)

Business & Industrial Economics +
Quality Data Analysis/ Operations Management/ Logistics Management/ Industrial Technologies

2 OUT OF 4 COURSES (30 ECTS CREDITS)

Business & Industrial Economics +
Operations Management/Logistics Management/ Industrial Technologies

2 OUT OF 3 COURSES (30 ECTS CREDITS)

Second Year of the Master of Science in ME

Completion of one of the 9 Concentrations

35 ECTS CREDITS

Free choice of courses for a multidisciplinary

and customized education

10 ECTS CREDITS

Final Thesis (Report or Thesis w/out Discussant)

15 ECTS CREDITS
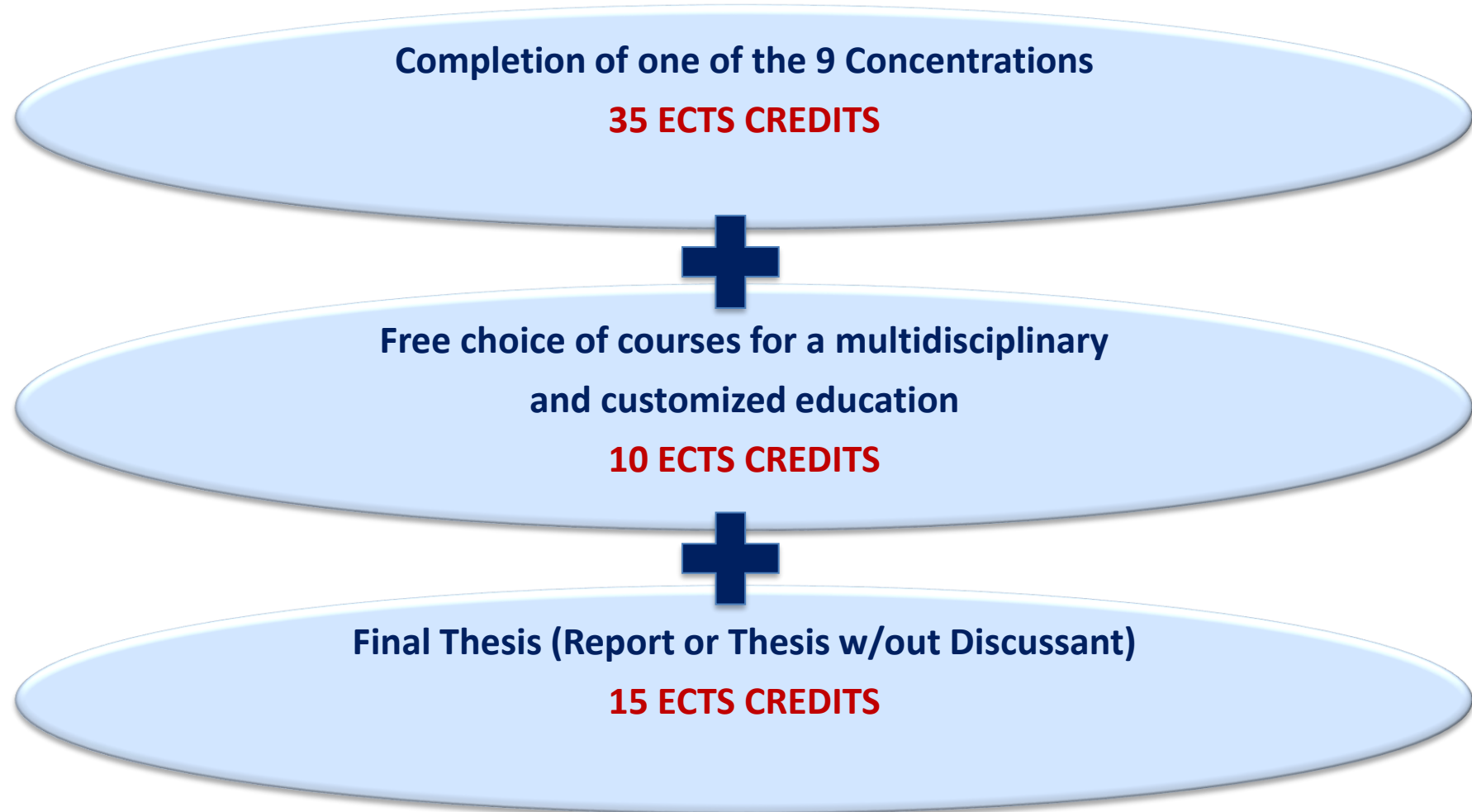
9 STREAMS (CONCENTRATIONS) available to students

Industry 4.0 (I4.0)
Digital Business and Market Innovation (DBM)
Design Management, Innovation and Entrepreneurship (DMI)
Energy and Environmental Management (EEM)
Finance (FIN)
International Business (IB)
Industrial Management (IM)
Sustainable Operations Management and Social Innovation (OSI)
Supply Chain Managament (SCM)

9 STREAMS (CONCENTRATIONS)

INDUSTRY 4.0	ECTS	ECTS
Smart Manufacturing Lab	10+5	15
Manufacturing Systems Engineering	5	5
Advanced Production Systems	5	5
Industrial Automation, Communication and Data Management	5	5
Additive Manufacturing	5	
De-Manufacturing	5	5
Safety Engineering and Management	5	
International Distribution	5	
Management of Design and Innovation Projects	5	

INDUSTRIAL MANAGEMENT	ECTS	ECTS
Industrial Management Lab and toolbox	15	15
Asset Lifecycle Management	10	10
Industrial Project Management A	10	
Operations Risk Management and Resilience	5	5
Quality Management	5	
Additive Manufacturing	5	
De-Manufacturing	5	
Safety Engineering and Management	5	
International Distribution	5	5
Digital Business Innovation	5	
Product Lifecycle Management	5	
Supply Chain and Purchasing Management	5	

9 STREAMS (CONCENTRATIONS)

SUSTAINABLE OPERATIONS MGT & SOCIAL INNOVATION	ECTS	ECTS
Business in Transformation: Social and Sustainability Challenges Lab	15	15
Advanced and Sustainable manufacturing	10	10
Social Innovation	5	5
Health Care Management	5	
De-Manufacturing	5	
Economics of Netowork Industries	5	5
International Distribution	5	
Operations Risk Management and Resilience	5	
Policy Analysis	5	

SUPPLY CHAIN MANAGEMENT	ECTS	ECTS
Supplier Relationship Management Lab	10	10
Advanced Supply Chain Planning Lab	10	10
Supply Chain Management	10	10
Digital Business Innovation	5	
Operations Risk Management and Resilience	5	
Quality Management	5	5
International Distribution	5	

9 STREAMS (CONCENTRATIONS)

ENERGY & ENVIRONMENTAL MANAGEMENT	ECTS	ECTS
Energy Management Lab	10	10
Management of Energy and Sustainabiity	10	10
Economics of Network Industries	5	5
Industrial Eco-efficiency	5	5
Fundamentals of Energy Technologies	5	5
Diritto dell'Energia	5	
Financial Risk Management	5	
Industrial Project Management B	5	
Power Production from Renewable Energy C	5	5
Operations Risk Management and Resilience	5	
Social Innovation	5	

DIGITAL BUSINESS AND MARKET INNOVATION	ECTS	ECTS
Designing Digital Business Innovation Lab	15	15
Multichannel Customer Strategy	10	10
Applied Statistics	5	
Courses	5	5
Digital Technology	5	
Additive Manufacturing	5	
Branding and Communication	5	
Public Management	5	5
Social Innovation	5	
Supply Chain and Purchasing Management	5	

9 STREAMS (CONCENTRATIONS)

DESIGN MANAGEMENT, INNOVATION & ENTREPRENEURSHIP	ECTS	ECTS
Design Management Lab	15	15
Design Strategy and Economics of Innovation	10	10
Additive Manufacturing	5	10
Management of Design and Innovation Projects	5	
Digital Business Innovation	5	
Entrepreneurship Economics and policy	5	
Product Life Cycle Management	5	
Branding and Communication	5	

FINANCE	ECTS	ECTS
Finance Lab + Corporate Finance	15	15
Financial Markets and Institutions + Macroeconomics of Finance	10	10
Financial Econometrics	5	5
Entrepreneurial Finance	5	
Financial Risk Management	5	
Investment Banking	5	
Financial Econometrics	5	5
Entrepreneurial Finance	5	
Entrepreneurship Economics and Policy	5	
Financial Risk Management	5	
Investment Banking	5	
Operations Risk Management and Resilience	5	

9 STREAMS (CONCENTRATIONS)

INTERNATIONAL BUSINESS	ECTS	ECTS
Investments in Foreign Markets Lab	15	15
International Economics	10	10
Economics and Management of Multinational Enterprises	5	5
International Markets and European Institutions	5	
Economics and Management of Multinational Enterprises	5	5
Global Supply Networks	5	
International Distribution	5	
International Markets and European Institutions	5	

The PhD Programme in Management Engineering (DRIG)

The PhD Programme (**DRIG)** provides advanced post-graduate Education in **Management, Economics and Industrial Engineering.**

- PhD students receive scholarships (funded by the Italian Government through the Ministry of Education and by firms/private/public institutions)

- Exchanges and visiting periods are a **mandatory requirement** in the programme

- The PhD **scholarship** increases by **50%** during the **semester** that students spend **abroad.** Moreover, **DRIG PhD students** have a **research** and **travelling budget**

Structure of the DRIG PhD Programme

YEAR 1 | YEAR 2 | YEAR 3

Research period abroad

Development of the doctoral thesis 125 ECTS

Main (methodological and thematic) courses - 35 ECTS

Elective courses and training on specific themes
(e.g. doctoral schools, research seminars, courses from other universities) - 20 ECTS

Presentation at international conferences/workshops

Evaluation 1 | Evaluation 2 | Evaluation 3

Final Viva and Graduation

POLITECNICO MILANO 1863

DRIG Portfolio of Courses: Main Methodological Courses

LIST OF MAIN METHODOLOGICAL COURSES	ECTS
Mandatory methodological courses	
Literature review in social sciences and engineering	5
Academic publishing	5
Main methodological courses (2 out of a portfolio of 5)	
Advanced topics in econometrics (Methods for panel data, SEM)	5
Survey and experimental research methodology	5
Case study and content analysis research methodology	5
Modelling and analysis of complex systems	5
Advanced skills for academic professionals	5

DRIG Portfolio of Courses: Main Thematic courses

LIST OF MAIN THEMATIC COURSES	ECTS
A transdisciplinary perspective on Big Data	5
Entrepreneurship and entrepreneurial finance	5
Sustainability of industrial systems	5
Innovation economics & management	5
Research challenges in production & service operations management	5
Research challenges in global value chain	5

An open, International University promoting Global Education

International Exchanges @ SoM

Strong commitment towards offering **ME** students diverse **experiences abroad**

Incoming students:
- **1120** students in the last 5 years
- From **137** institutions

Our International Network
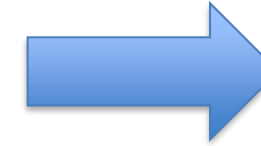
Outgoing students:
- **1034** students in the last 5 years
- To **141** institutions

International Exchanges @ SoM

Standard "Erasmus" exchanges	International Alliances	International Double/Dual Degrees
Normally **1 semester** abroad (on average 30 ECTS credits) More than **150** destinations worldwide Both at **BSc** and **MSc** level **200+** outgoing students every year	Normally **1 year** abroad (depending on the programs), possibly in more sites **Alliance4Tech** **UNITECH** **QTEM** **MS level**	**1,5 to 2 years** abroad • Intl. Double Degrees promoted by POLIMI (40+ programs), at BSc and MSc level • Intl. Dual Degrees promoted by **SoM**-POLIMI, **only MSc** level

International Dual Degrees promoted by POLIMI-SoM

- **Dedicated programmes** for Mgt. Engineering MSc degree

- **5 positions** for each institution every year

- Approx **1 ½ years abroad** (80-90 credits)

International Alliances – UNITECH

- Up to **1 year** abroad, 1 site

- **3 weeks** through the year of shared experiences (in 3 other sites)

- Approx. **20 extra credits** to be done, in addition to standard credit load

- UNITECH **standard paths** in place, based on the partners' academic offerings

- Approx. 1-2 students from ME per year, based on **internal competition**

- "**Free mobility**" idea: students can move among European campuses, while earning credits

- Based on a **2 semester abroad** approach

- Up to **10 positions for ME at MSC level**

QTEM, Quantitative Techniques for Economics and Management: global **network** which aims to bring together outstanding students, Academic Partners and International Corporations.

Focus on developing skills in **analytical and quantitative techniques** to support decision making in an international context.

Based on a **two semester** international experience (different sites) + an **internship** in a partner company

Student Welcome and Support

- Exchange and double degree students are greeted at Politecnico during the **Welcome Week** through which they are initiated to their student experience at Politecnico https://www.polimi.it/en/exchange-students-incoming/welcome-activities/

- The *Studesk* **Office** supports them for their course registration
   and for any related matter

- Intl. Double degree students meet their Polimi **Academic advisor**
   available throughout their study period for guidance

Being an Exchange Student at Politecnico di Milano

Course Registration and Structure:

- In order to register for classes, students must fill out their **Study Plan on line**
- Exchange students' Study Plan must follow their **Learning Agreement**.
- Students **register for classes once they arrive**, not before
- Courses run by semester (Sept/Jan – Feb/July)
- Exchange students can enroll in **most Polimi classes**
- A full-time student enrols for approx. **30 ECTS** credits
- **Attendance** is for the most part **not mandatory**
- Most ME courses are **open** (no caps on courses)
- Students must pay attention to class **location** – 7 Campuses

Final Examinations
- Students **cannot** take exams for courses that are not included in their study plan
- In order to take an exam, students **must sign up** for it in advance.
- Exam Sessions take place five times a year: January, July, September, December, April
- Exams can be written, oral, or a mix. Some courses (e.g. labs) evaluate also assignments given during the semester
- A student can **refuse a grade** and try the exam again
  (following the provided exam calendar)
- Some courses might have a mid-term exam (Nov - May)

Being an Exchange Student at Politecnico di Milano

Exchange students find many ways of becoming part of the **Polimi Community**

- The **Buddy System** provides new intl. students with **peer support** for 3 months, helping them adapt to a new academic environment, and to a culture and traditions often distant from their own.

- There are numerous and diverse **Student Organizations** https://www.youtube.com/watch?v=No6ELD7aDmw

- **ESN** Erasmus Student Network: provides information and support, organizes events, trips and more for exchange students
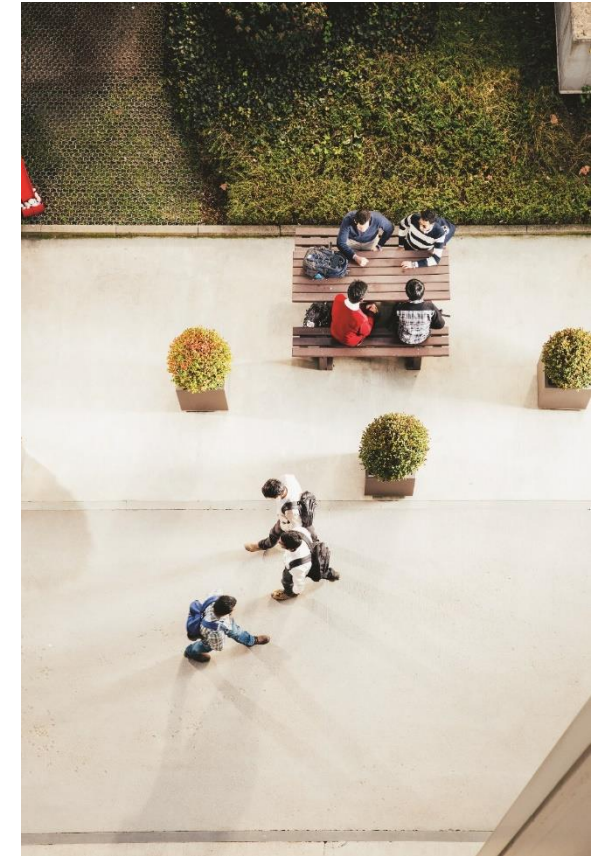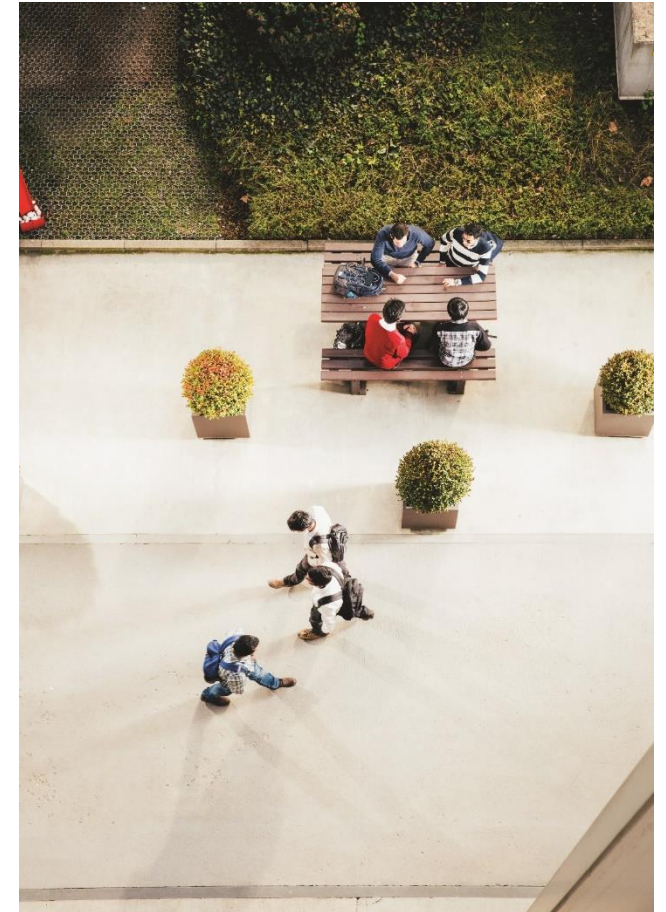
Being an Exchange Student at Politecnico di Milano

- Exchange students can also apply for **Housing at Politecnico (Residence Halls),** offering multiple types of accommodations (limited spots available)
http://www.residenze.polimi.it

- **Polimi SPORT**: playgrounds, teams, tournaments. Strong participation and community spirit

   http://www.sport.polimi.it/

Being an Exchange Student at Politecnico di Milano

Students will have different living habits, so costs in Milan will vary significantly. The following prospect should therefore serve as a broad indication:

COST OF LIVING (MONTHLY)	
Housing	€ 350/650
Food	€ 150/200
Books & Study Materials	€ 40
Sports & Social Life	€ 80
Transportation (local)	€ 20
Phone	€ 10/30
GRAND TOTAL	**€ 650/1020**

Milan Today
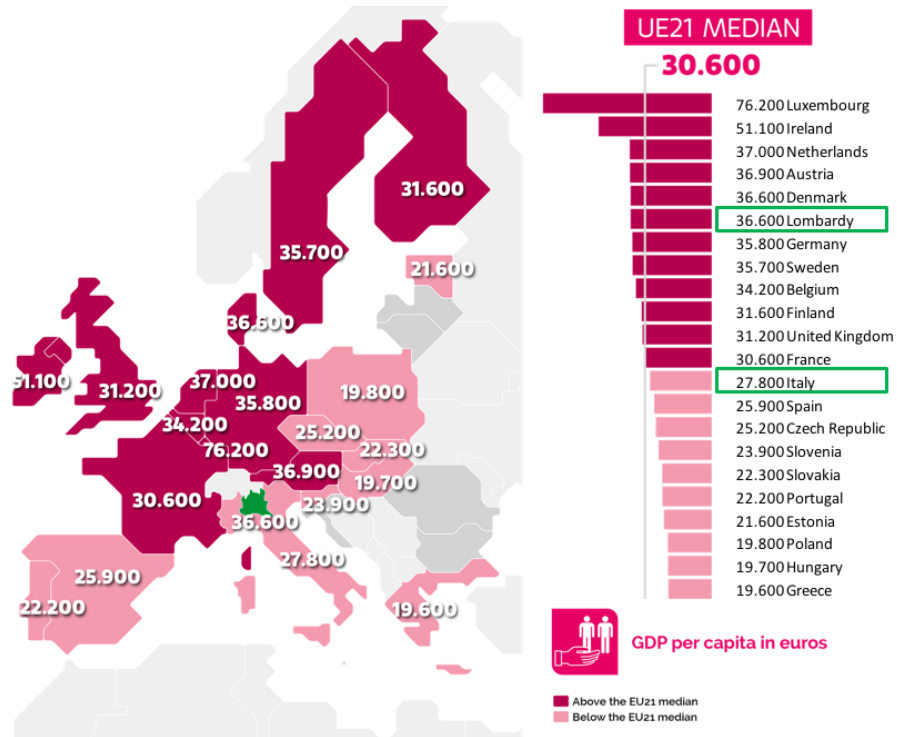
Main city of the **Lombardy** region, described as the «Locomotive of Italy», at the heart of the **manufacturing system** that produces **21%** of Italy's GDP.

One of Europe's most important **financial** hubs, also the capital of **fashion** and **design.**

Today a force of **innovation** and experimentation, the best environment for **start-ups** and excellent technical innovation centre.

Milan Today

Living in Milan also means being exposed to a constant stream of **artistic** and **cultural** initiatives, along with an intense calendar of **entertainment** events

Milan today is one of the richest, most dynamic, multicultural cities in Europe
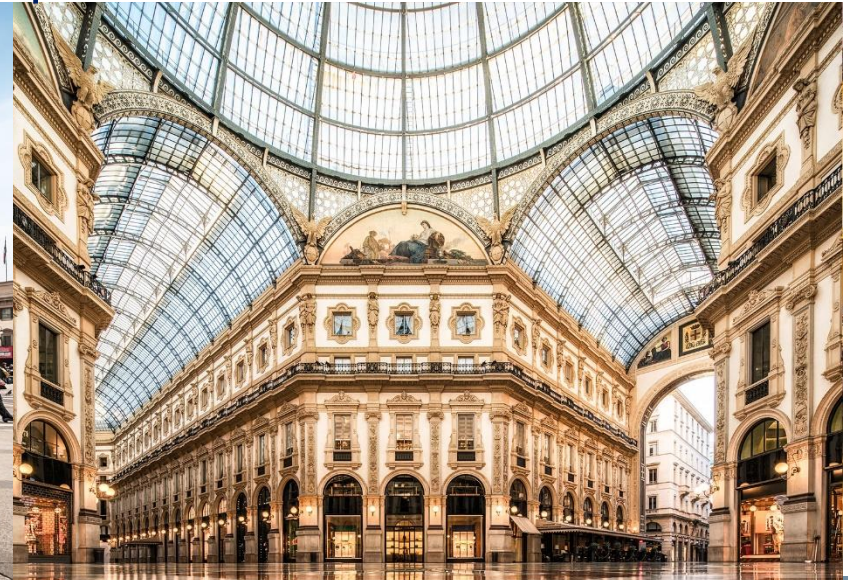
SoM - Department of Management Engineering
International Exchanges and Mobility

exchangemanagement-dig@polimi.it