



POLITECNICO
MILANO 1863

MSc in Management Engineering

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Politecnico di Milano:

«A EUROPEAN LEADING UNIVERSITY DRIVING SCIENCE AND TECHNOLOGICAL INNOVATION TO IMPROVE HUMAN LIFE IN A SUSTAINABLE AND RESPONSIBLE WAY»



Over **45.000**
students

12
Departments

Over **1.300** professors and
1.200 professional staff



Schools of
**Architecture,
Design,
Engineering**

Ranked **no.1 in Italy,**
no. 6 in Europe, no. 20 worldwide
QS World University Ranking 2020,
Engineering & Technology



School of Management:

«TO IMPACT ON SOCIETY BY CREATING AND SHARING KNOWLEDGE AT THE INTERSECTION BETWEEN ENGINEERING, MANAGEMENT AND ECONOMICS»



45
ADJUNCT
PROFESSORS



111
CORE FACULTY
MEMBERS



OVER
4,900
STUDENTS IN DEGREE
PROGRAMMES



129
EXTENDED
FACULTY MEMBERS



26
DEGREE
PROGRAMMES



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SCHOOL OF MANAGEMENT



23%
INTERNATIONAL
STUDENTS



38mio €
TOTAL BUDGET



12,000m²
IN THE BOVISA
CAMPUS



131
STAFF



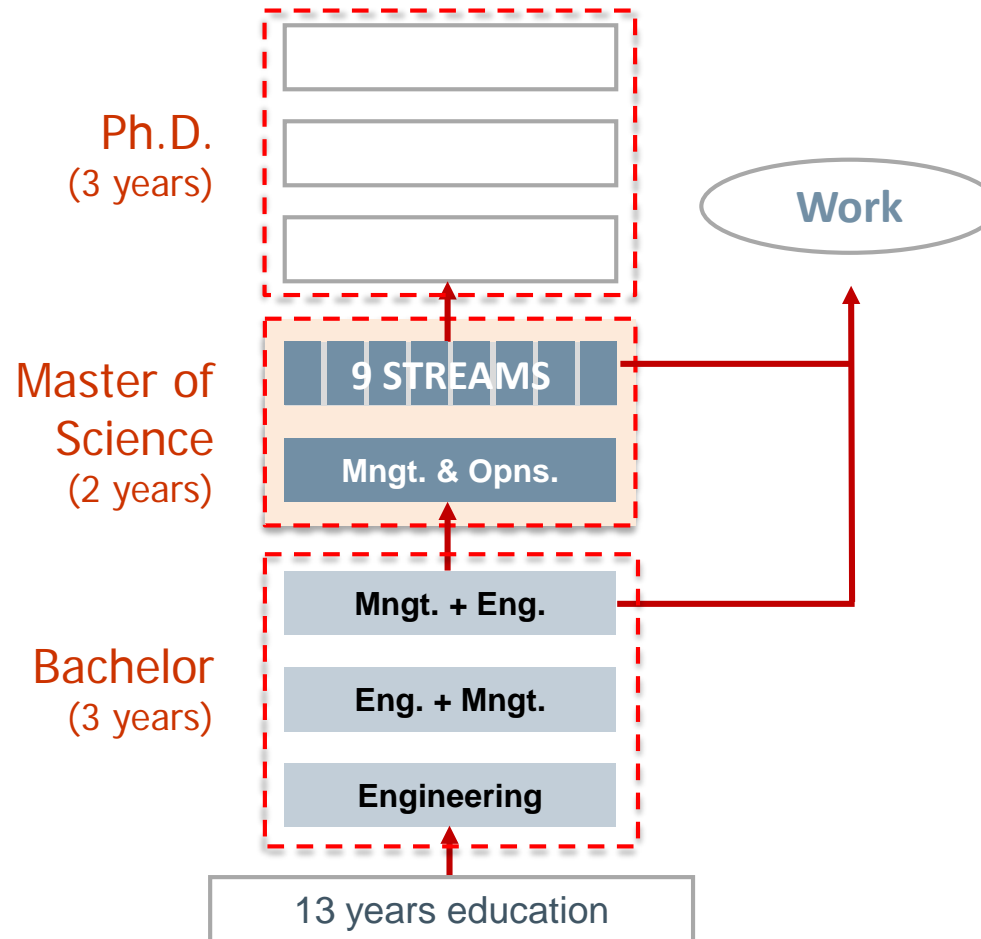
OVER
130
EXECUTIVE COURSES
AND SEMINARS



OVER
1,400
SCIENTIFIC CONTRIBUTIONS
IN THE LAST FIVE YEARS



Management Engineering within the Italian Education context



Duration	2 years
Calendar	Sept/Dic – Feb/Jun
Course size	5-15 ECTS
Workload	120 ECTS
Enrolments (≈)	800

Notes:

- Specific managerial competences based on a solid scientific and engineering background
- 15.000 graduates since the constitution in 1982
- Entirely taught in English
- Over 20% of International students
- Huge opportunities for experiences abroad through exchanges and double degree programs: over 25% of our students have experiences abroad
- Double degrees with other international universities

A number of different opportunities

- Access to one of the top universities worldwide
- A real international environment
- Campus and sport life (e.g. Hub of Student Activities - HSA)
- Deep-dive into concrete business problems (Labs): close interaction with industry
- Double Degrees with other departments and other universities
- Opportunity to access our «Honours Programme»





Multimedia classroom to facilitate project activities on real problems proposed by companies (MEL1 & MEL2)

- Flexible layout and sofas to support both standard classes and group work activities
- Wi-Fi and Bluetooth video beamers to show multimedia contents of both teacher and students at the same time through computers, tablets, smartphones...
- Writable walls all over the room from floor to ceiling to stimulate creativity and expression
- Moving whiteboards to create cubicles

A number of different opportunities

- **Erasmus** and **extra-UE** agreements (Europe, USA, China, Australia, etc.)

- **Double Degree** programs (T.I.M.E.)

- **UNITECH:**

- Politecnico di Milano (Italia)
- Chalmers University of Technology (Svezia)
- CentraleSupelec (Francia)
- ETH Zurich (Svizzera)
- Loughborough University (Inghilterra)
- RWTH Aachen University (Germania)
- Trinity College (Irlanda)
- TU Delft (Olanda)
- Universitat Politecnica de Catalunya (Spagna)

- **IDEA League:**

- Politecnico di Milano (Italia)
- ETH Zurich (Svizzera)
- TU Delft (Olanda)
- Chalmers University of Technology (Svezia)
- RWTH Aachen University (Germania)



- **Alliance4Tech:**

- Politecnico di Milano (Milano)
- Technische Universität Berlin (Berlino)
- CentraleSupelec (Parigi)
- University College London (Londra)

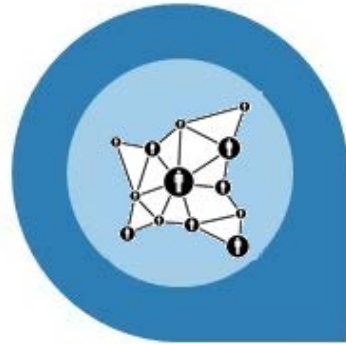
ALLIANCE 4 TECH



Mentorship programme: The four pillars

Networking

Participate and build a network of friendly people who share your interests



Senior Mentorship

Develop a one-on-one relationship with a top professional of our SOM



Civic Responsibility

Learn to participate and become an agent for change in your community



Active learning

Experience how to teach bachelor students while growing skills to equip you for your career



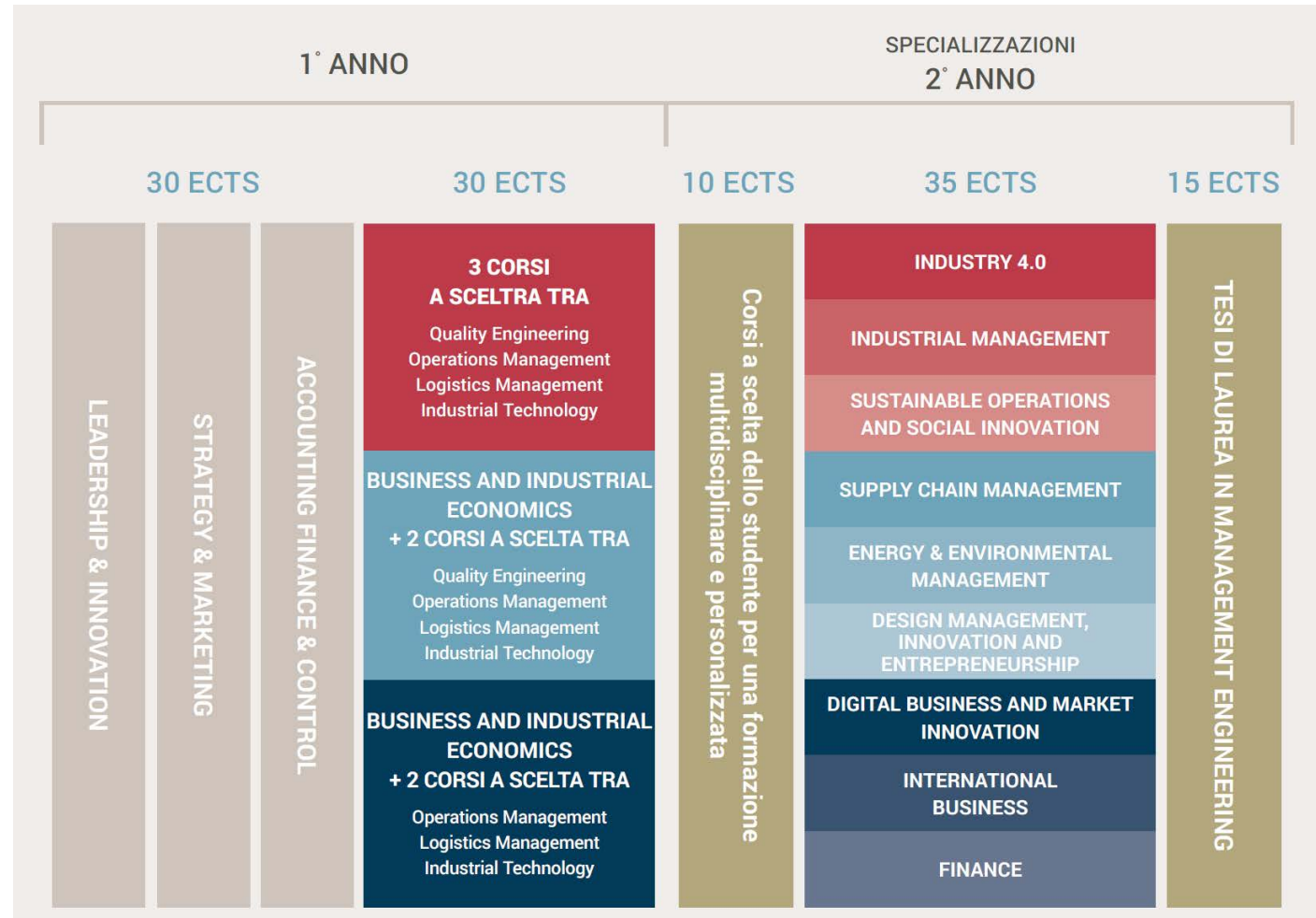
Intended Learning Outcomes

MASTER OF SCIENCE IN MANAGEMENT ENGINEERING

1. **Understand** context, functions, processes in a business and industrial environment and the impact of those factors on business performance
2. **Identify** trends, technologies and key methodologies in a specific domain (specialization streams)
3. **Design** solutions applying a scientific and engineering approach (Analysis, Learning, Reasoning, and Modeling capability deriving from a solid and rigorous multidisciplinary background) to face problems and opportunities in a business and industrial environment
4. **Develop** new ideas and solutions in business and industrial scenarios evolving over time
5. **Interact** in a professional, responsible, effective and constructive way with colleagues in a working environment, also motivating group members

MSc in Management Engineering overall structure

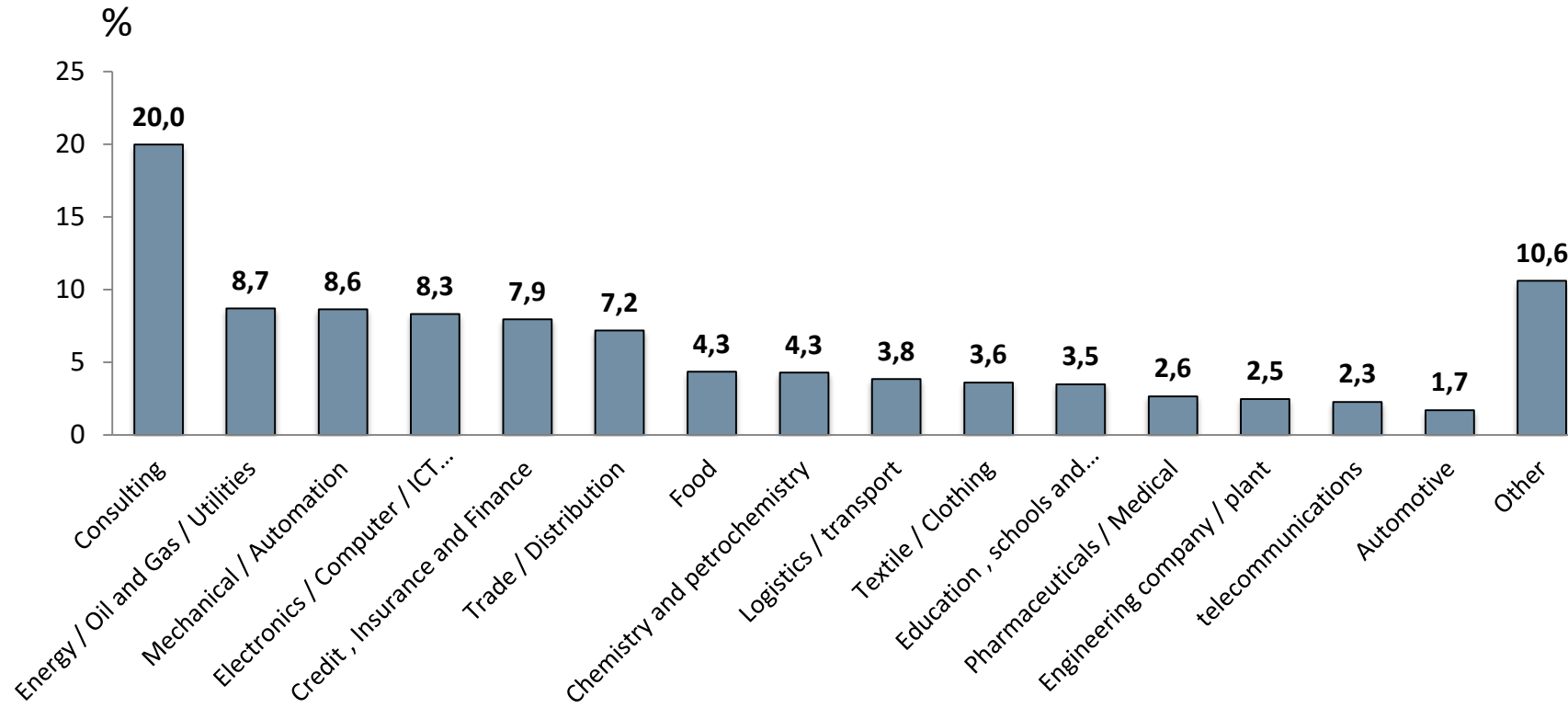
First year focuses on building a common body of knowledge that characterizes the management engineer



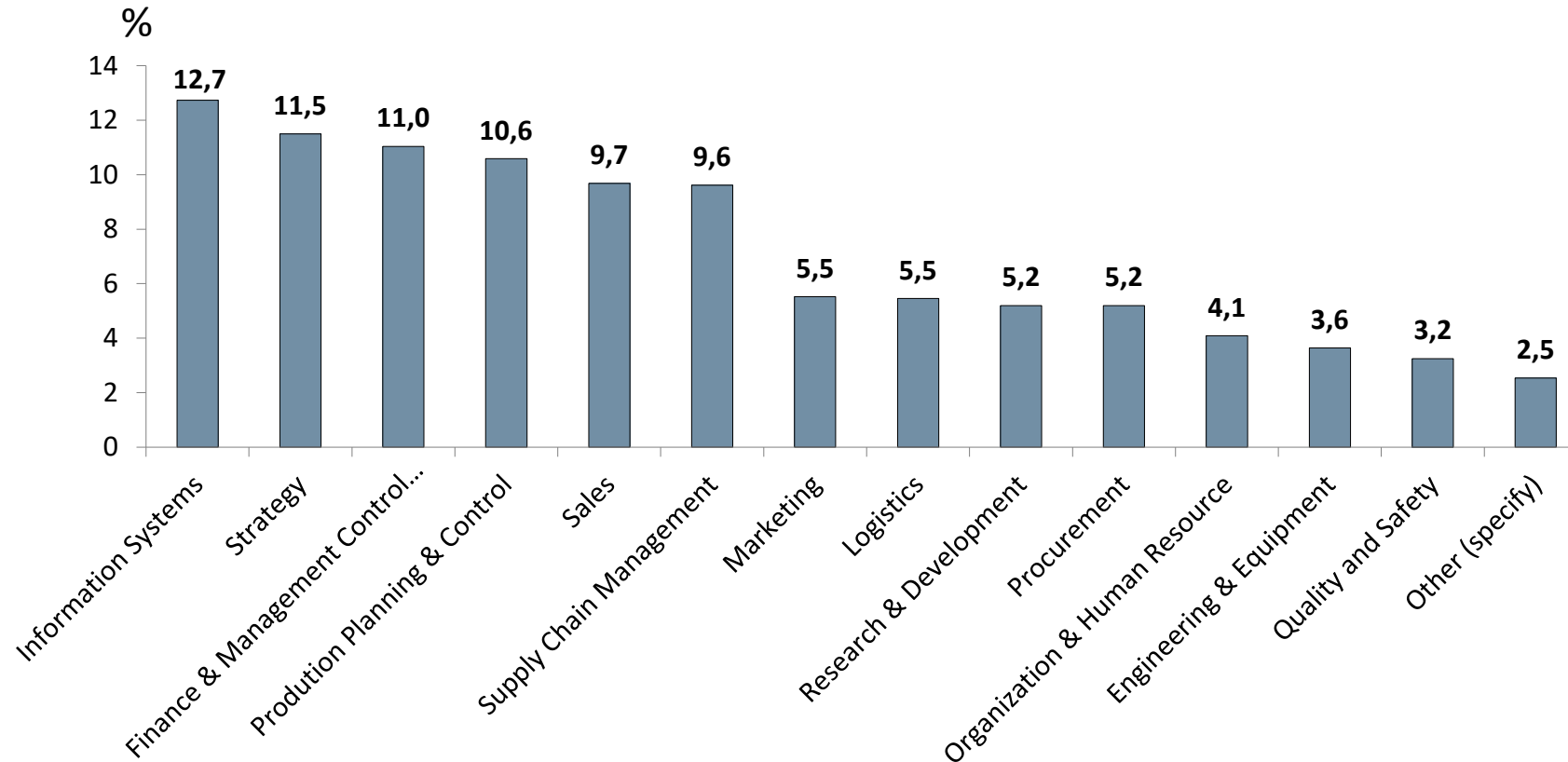
Second year is dedicated to developing vertical competencies within specific concentrations

- The application process is performed through the **online system (servizi on line)**: www.polimi.it
 - **Admission requirements:**
 - **Graduates from Italian universities - Adjusted admission threshold:**
 - Graduation at the Bachelor in no more than **four academic** years from initial enrolment, i.e. before April 30th of the fifth year after the first enrolment (e.g. September 2016 - April 30th 2021)
 - Engineers from other Italian universities: $26 + (N-3)/2$ or $99/110 + (N-3)*2$
 - Other graduates from other Italian universities: $27 + (N-3)/2$ or $102/110 + (N-3)*2$
 - **Graduates from universities abroad:**
 - Applications will be assessed by the Admission Committee
- N = number of years required to achieve the Bachelor starting from the first enrollment
(e.g. 9 semesters → N=4,5)
- Please, make **1 application only** for management engineering (there is no difference in the application process for the different streams)

Main employers

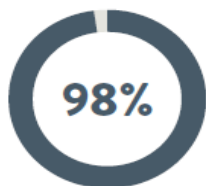


Main jobs



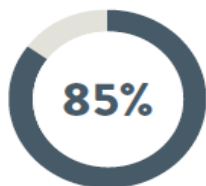
Placement data

EMPLOYMENT RATE*



* 1 year after graduation, except students

WITHIN 6 MONTHS*

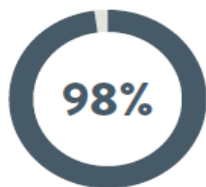


* percentage calculated on those employed 1 year after graduation

NET MONTHLY SALARY

€1,751

EMPLOYEES



CONTRACT TYPE*



Permanent	59%	●
Fixed-term	17%	●
Apprenticeship	20%	●
Internship	1%	●
Other*	3%	●

* project based, occasional collaboration

COMPANY SIZE*



1 - 250	33%	●
251 - 1.000	15%	●
+1.000	52%	●

* number of employees



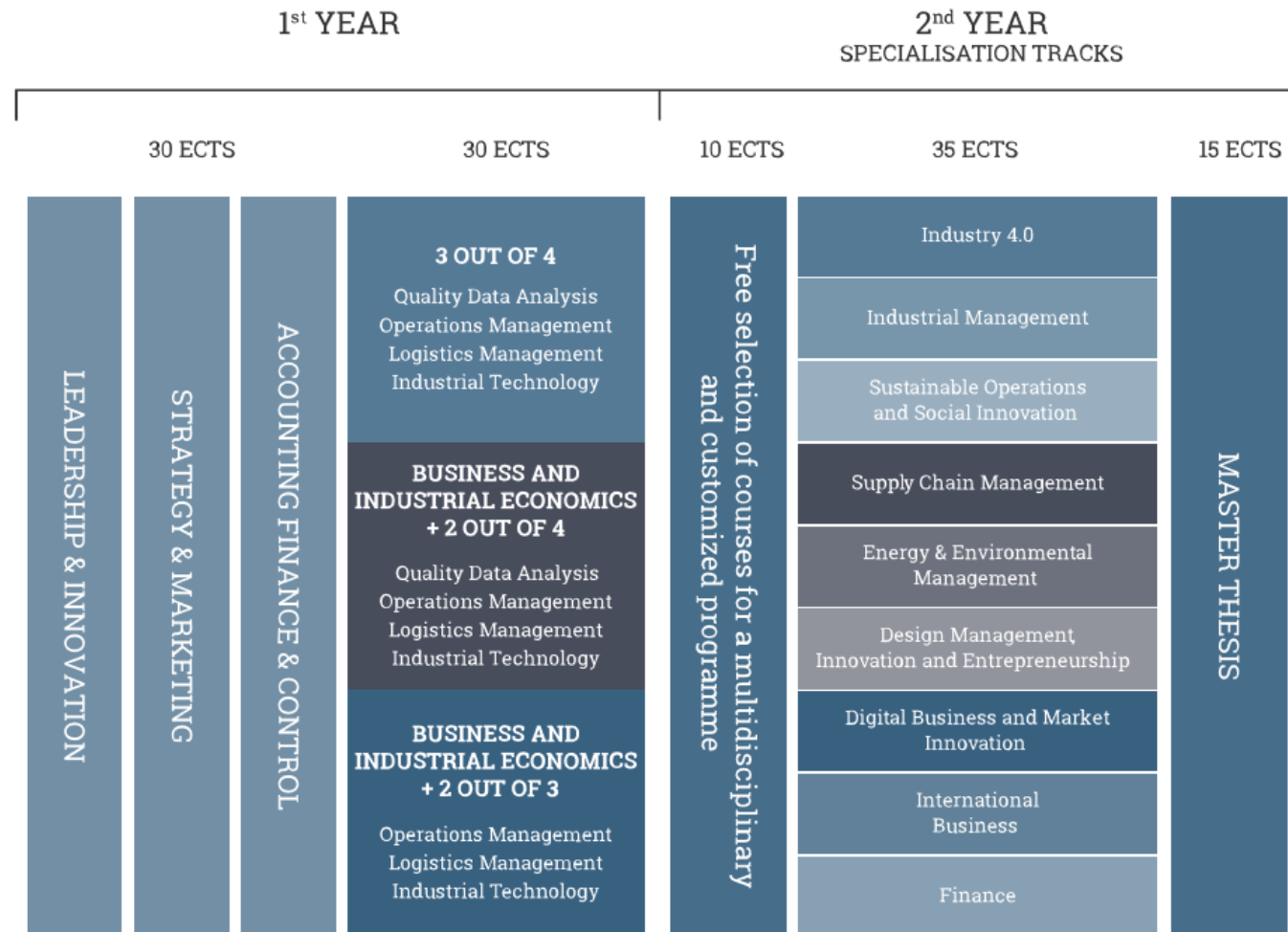
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Annex

MS in Management Engineering: Detail of the streams

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

Scenario and Market Needs

- **Europe and Italy are leaders** in different industrial and consumer sectors
- Manufacturing is in the **agendas of most countries** around the planet (investments in the next few years to boost manufacturing activities: 200M\$ in USA, 140M£ in UK, 1.200M€ in Europe)
- Europe must keep most strategic, advanced and **value added manufacturing processes**

Jobs

- Employed mostly in manufacturing companies: new product and process design, manufacturing strategies, manufacturing system designer, quality manager, consultant in industrial engineering ...

Intended Learning Outcomes

- Be able to **rethink products, processes and production systems** to remain competitive
- Understand **new technologies**, new materials and man-plant synergies
- Generate **new solutions** combining technological and organizational aspects

Contact Details

- Prof. Marco Taisch: marco.taisch@polimi.it
- Prof. Bianca Maria Colosimo: biancamaria.colosimo@polimi.it

Industry 4.0 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Smart Manufacturing Lab	A	10	10	16-17
Manufacturing Systems Engineering 1	1	5	5	16
Advanced Production Systems	1	5	5	17
Industrial automation, communication and data management	1	5	5	Ing inf
Additive Manufacturing	1	5	5	16
De-Manufacturing	1	5		16
Safety Engineering and Management	1	5		17
International Distribution	2	5		17
Management of Design and Innovation Projects	2	5		35
Free FREELM	1-2	10-14	14	-
Final Project (Thesis)	1-2	15	15	-

Scenario and Market Needs

- Designing and running manufacturing and service businesses is more complex than in the past:
 - **Globalisation** of markets and production
 - **Customisation** of products and services
 - Faster **Technology** development
 - Competition for **critical resources**
 - Higher **competence level** for all workers

Jobs

- Employed mostly in consulting and manufacturing companies: investments decisions, large industrial projects, manufacturing process design and management, operations improvement, asset life cycle management, plant management ...

Intended Learning Outcomes

- Be able to build sustainable competitive advantage through **innovative production and service operations models** through a systems-thinking approach
- Run **company sites** in an effective and efficient way
- **Set up new sites and new initiatives** for the company's competitive advantage in the long run
- **Define operating processes**, direct investment in new technologies, develop competences and assets

Contact Details

- Prof. Alberto Portioli: alberto.portioli@polimi.it

Industrial Management: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Industrial Management Lab and toolbox	1-2	15	15	17
Asset Lifecycle Management	1	10	10	17
Industrial Project Management A	1	10		17
Operations Risk Management and Resilience	1	5	5	17
Quality Management	1	5		17
Additive Manufacturing	1	5	5	16
De-Manufacturing	1	5		16
Safety Engineering and Management	1	5		17
International Distribution	2	5		17
Digital Business Innovation	2	5		17+35
Product Lifecycle Management	2	5		17
Purchasing and Supply Chain Management	1	5		17+35
Free FREELM	1-2	10-14	14	-
Final Project (Thesis)	1-2	15	15	-

Sustainable Operations Management and Social Innovation

Scenario and Market Needs

- **Sustainability** is a key challenge for the future
- Social and Environment sustainability is in the **agendas of most countries** around the planet (investments by 2020: 1 trillion\$ in the world)
- All organizations around the world will face more and more the need to **redesign their process to pursue sustainability**

Jobs

- Employed mostly in multinationals, consulting and financial companies, NGOs and international institutions: sustainability department, strategy, manufacturing process design and management, product life cycle management, innovation and development ...

Intended Learning Outcomes

- Understand how **“societal challenges”** are changing the way companies operate
- Analyze **new business models**, partnerships and technologies required by these challenges
- Implement appropriate **product and service design**, manufacturing and logistics approaches
- Map the trade-off between **economic, social and environmental performances**

Contact Details

- Prof. Mario Calderini: mario.calderini@polimi.it
- Prof. Marco Taisch: marco.taisch@polimi.it

Sustainable Operations Management and Social Innovation: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD	
Business in Transformation: Social and Sustainability Challenges Lab	1	15	15	17+35+SPS/04	
Advanced and Sustainable manufacturing	1	10	10	17	
Social Innovation	1	5	5	35	
Health Care Management	2	5	5	35	
De-Manufacturing	1	5		16	
Economics of Network Industries	2	5		35	
International Distribution	2	5		17	
Operations Risk Management and Resilience	1	5		17	
Policy Analysis	2	5		Policy	
Free GESLM	1-2	5		5	-
Free FREELM	1-2	5-8		8	-
Final Project (Thesis)	1-2	15	15	-	

Supply Chain Management

Scenario and Market Needs

- Competition is not among companies anymore but among **supply networks**
- Companies are acting on a **global scale**
- Suppliers upstream participate in the **80% of the overall value** delivered to customers
- Customers and distribution networks are more and more **complex and demanding**

Jobs

- Employed mostly in manufacturing, service and consulting companies: supply chain management, demand and supply planning, procurement, global sourcing, logistics and distribution, operations planning and control ...

Intended Learning Outcomes

- Understand **typical trade-offs** within a complex supply chain
- Implement **methods and ICT approaches** to solve supply-chain critical issues
- Measure and control **supply chain processes**
- Analyze and manage supply chains for different types of **markets and products**

Contact Details

- Prof. Andrea Sianesi andrea.sianesi@polimi.it

Supply Chain Management: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Supplier Relationship Management Lab	2	10	10	35
Advanced Supply Chain Planning Lab	2	10	10	17
Supply Chain Management	1	10	10	17+35
Digital Business Innovation	2	5	5	17+35
Operations Risk Management and Resilience	1	5		17
Quality Management	1	5		17
International Distribution	2	5		17
Free FREELM	1-2	10-14	14	-
Final Project (Thesis)	1-2	15	15	-

Scenario and Market Needs

- Energy Management is increasingly assuming a **pivotal role**
- “Big bang disruption” of **renewables and shale gas&oil technologies**
- Sustainability of critical resources, with **reduced impacts on the environment**, is increasingly becoming a must
- The European Commission estimates that the impact of the “Package 20-20-20” would create 2 more **million of “green employees”**

Jobs

- Employed mostly in energy companies, consulting, financial institutions and regulatory authorities: general management, business development, analysts, energy management, ...

Intended Learning Outcomes

- Understand **global energy and environment** scenarios
- Understand competition dynamics and **design new business models**, including Energy Service Companies (ESCOs), e-mobility, smart cities and eco-industrial parks
- Evaluate **incentive mechanisms and policies**
- Design solutions for **energy and resource efficiency**
- Implement **strategic and technical improvements**

Contact Details

- Prof. Vittorio Chiesa: vittorio.chiesa@polimi.it
- Prof. Paolo Trucco: paolo.trucco@polimi.it

Energy and Environmental Management: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Energy Management Lab	2	10	10	17+35
Management of Energy and Sustainability	1	10	10	35
Economics of Network Industries	2	5	5	35
Industrial Eco-efficiency	1	5	5	17
Fundamentals of Energy Technologies	1	5	5	Energy
Diritto dell'Energia	2	5	5	Law
Financial Risk Management	2	5		35
Industrial Project Management B	2	5		17
Power Production from Renewable Energy C	1	5		Energy
Operations Risk Management and Resilience	1	5		17
Social Innovation	1	5		35
Free FREELM	1-2	5-8	8	-
Final Project (Thesis)	1-2	15	15	-

Design Management, Innovation and Entrepreneurship

Scenario and Market Needs

- **New products and services** are key engines of competitiveness, growth, and long-term sustainability
- Innovation comes from a variety of **different sources** within and outside the company
- Effective innovation requires people with **entrepreneurial orientation** and collaborative attitude
- **Development processes**, for rapidly testing and implementing ideas, reaching global markets

Jobs

- Employed mostly in manufacturing, service companies and start-ups: Innovation Manager, Entrepreneurs, Strategy, Marketing, R&D, New Business Development, Design, Product Management ...

Intended Learning Outcomes

- Search for new opportunities and find **creative solutions**
- **Engage others** (internal teams and external partners)
- Operate in creative contexts, **get creativity into business**
- Master the new product and service innovation through the entire **product life cycle**
- Adopt a **multi-disciplinary approach**: Design Management, Innovation Management, Entrepreneurship, Product service development

Contact Details

- Prof. Massimo Colombo: massimo.colombo@polimi.it
- Prof. Roberto Verganti: roberto.verganti@polimi.it

Design Management, Innovation and Entrepreneurship: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Design Management Lab	1	15	15	<i>Icar13+35</i>
Design Strategy and Economics of Innovation	1	10	10	35
Additive Manufacturing	1	5	10	16
Management of Design and Innovation Projects	2	5		35
Digital Business Innovation	2	5		<i>17 + 35</i>
Entrepreneurship Economics and policy	2	5		35
Product Life Cycle Management	2	5		17
Branding and Communication	2	5		<i>Design</i>
Free GESLM	1-2	10-13		13
Final Project (Thesis)	1-2	15	15	-

Scenario and Market Needs

- Information & Communication Technologies (**Digital Technologies - DTs**) are becoming more and more pervasive and disruptive
- DT are driving **significant changes** and innovations in many markets
- DT are changing the way to **manage data** from all sources, enhancing decision-making
- All organizations need **individuals** able to exploit DT-driven business innovation

Jobs

- Employed mostly in consulting, service companies and start-ups: Information Technology, Marketing, Innovation Manager, Data Scientist, Strategy, New Business Development, ...

Intended Learning Outcomes

- Effectively interpret all the **current trends and future scenarios** regarding DT
- Play an **active and driving role** in digital innovations
- Understand how to **take advantage of the infinite data** and information available in the digital realm
- Identify the **business opportunities** brought on by DTs to create innovative startups

Contact Details

- Prof. Raffaello Balocco: raffaello.balocco@polimi.it
- Prof. Giuliano Noci: giuliano.noci@polimi.it

Digital Business and Market Innovation: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Designing Digital Business Innovation Lab	2	15	15	17+35
Multichannel Customer Strategy	1	10	10	35
Applied Statistics	1	5	5	<i>Statistics</i>
Machine Learning	1	5		<i>Informatics</i>
Digital Technology	2	5		<i>Informatics</i>
Additive Manufacturing	1	5	5	16
Branding and Communication	2	5		<i>Design</i>
Public Management	1	5		35
Social Innovation	1	5		35
Purchasing and Supply Chain Management	1	5		17+35
Free GESLM	1-2	5	5	-
Free FREELM	1-2	5-8	8	-
Final Project (Thesis)	1-2	15	15	-

Scenario and Market Needs

- After the **financial crisis** has hit many countries, reverting to a positive and constructive role is crucial for Finance today
- The Finance of the future needs to be **closer to the real economy** and to enterprises
- Financial markets have become **more and more complex** in terms of actors, tools, regulations and global interactions

Jobs

- Employed mostly in financial companies, consulting, service and manufacturing companies: Asset & Investment Management, Corporate Finance, Investment & Commercial Banking, Risk Management, Accounting & Finance...

Intended Learning Outcomes

- Knowledge of **financial markets** and their structure
- Knowledge of the main **financial intermediaries**
- Knowledge of the **finance unit** in large firms
- Knowledge of main **risk categories**, both financial and non-financial
- Knowledge of financing methods available to firms to **raise financial resources** during their life cycle
- Knowledge of the **main financial instruments** (e.g. derivatives, supports to internationalization)

Contact Details

- Prof. Marco Giorgino: marco.giorgino@polimi.it
- Prof. Giancarlo Giudici: giancarlo.giudici@polimi.it

Finance: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Finance Lab + Corporate Finance	A	15	15	35
Financial Markets and Institutions + Macroeconomics of Finance	1	10	10	35+Economics
Financial Econometrics	2	5	5	Economics
Entrepreneurial Finance	1	5		35
Financial Risk Management	2	5		35
Investment Banking	1	5		35
Financial Econometrics	2	5	5	Economics
Entrepreneurial Finance	1	5		35
Entrepreneurship Economics and Policy	2	5		35
Financial Risk Management	2	5		35
Investment Banking	1	5		35
Operations Risk Management and Resilience	1	5		17
Free GESLM	1-2	5	5	-
Free FREELM	1-2	5-8	8	-
Final Project (Thesis)	1-2	15	15	-

Scenario and Market Needs

- The international fragmentation of production systems and the **geographical dispersion** of the value chain have opened up new scenarios and opportunities
- This requires a comprehensive understanding of the **international business environment** (policies, regulations ...)
- Appropriate frameworks and methodologies are needed to compete in this global economy and understand the **interaction between firms' strategies, institutions and policies**

Jobs

- Employed mostly in multinational companies, consulting and institutional organizations: foreign markets relationships, business development, export management, global sourcing ...

Intended Learning Outcomes

- Acquire a **holistic view of the international business environment**, and how policies and regulations affect industries and firms
- Develop **analytical and pragmatic business capabilities**
- Develop **cross-cultural** interpersonal skills
- Be able to **connect the 'micro' firm view with the 'macro' view** of countries and regions
- Understand the **interaction between firms' strategies, economic and development policies, and the changing global environment**

Contact Details

- Prof. Lucia Piscitello: lucia.piscitello@polimi.it

International Business: 2nd year curriculum

Courses	Sem	ECTS	ECTS	SSD
Investments in Foreign Markets Lab	2	15	15	17+35
International Economics	1	10	10	<i>Economics</i>
Economics and Management of Multinational Enterprises	1	5	5	35
International Markets and European Institutions	1	5		<i>Economics</i>
Economics and Management of Multinational Enterprises	1	5	5	35
Global Supply Chains and Networks	1	5		17+35
International Distribution	2	5		17
International Markets and European Institutions	1	5		<i>Economics</i>
Free GESLM	1-2	10-13	13	-
Final Project (Thesis)	1-2	15	15	-



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