

Master of Science in Design and Management of the industry 4.0

Master's Degree in Science

Join a 2-year program after a Bachelor's of Science, Engineering or Technology

The industry 4.0 requires the companies to quickly adapt in order to maintain their competitivity or even survive on the market: shifting to circular organization, integrating **new technologies** and **hybrid systems**, making the most of the **Internet of Things (IoT)** and using **predictive analysis tools** to manage the production and maintenance.

The MSc in Design and Management of the Industry 4.0 enables students to **develop extensive expertise in system automation, production management and autonomous & intelligent systems**. They will learn how to manage industrial processes, both in terms of organization and automation.

In addition to their strong technical expertise, to secure management positions in an industrial or logistics environment, **one semester in IMT Business School is dedicated to the development of management and communication skills** as well as the acquisition of knowledge in the fields of business, finance and logistics.

The courses provided in this master's degree directly respond to industrial issues, and students will **be in direct contact with researchers in IMT Nord Europe research centres. The program is project-focused** both in engineering and research. Thanks to the modern laboratories, students will be offered the up-to-date technical resources required to get an efficient background in machine learning and data analysis applied to industrial topics and to master the art methods related to processes automation.

- 100% taught in English
- Douai Lahure Campus

🚩 A 6-month paid internship

9,000 Euros per year
Possible scholarship opportunities

Admission Process

Application Form and Interview Deadline: June 30th, 2023

master-of-science@imt-nord-europe.fr

Academic Prerequisites

A **Bachelor's Degree** or an equivalent international degree in Science, Technology or Engineering.

For non-native English speakers, a certificate or other proof of English proficiency equivalent to B2

#IMTNordEurope

	UV Name	Course	Teaching Hours	Course ECTS credits	
	Production Management	Extended enterprise related concepts	24		
		Designing and organizing a production system : a case study	4		
		Computer Assisted Production Mana- gement : design and optimization of a mass production line	24	7	
		BASICS : Basis of Supply Chain Management	24		
		Introduction to Industrial Maintenance	8		
1	Industrial Process Automation	Programmable Logic Controlers	44	7	
SEMESTER		Automatics	32		
	Logistics and Intelligent Transportation Systems	Logistics and Supply Chain Manage- ment	40		
		Intelligent Transportation Systems	36	7	
		Transportation Systems Simulation	10		
	Softwares and Architectures for Mobile Robotics	Introduction to Mobile Robotics and Associated Software Architectures	8		
		Micro-project : modular architecture	2		
		Micro-project : sensors data fusion	2	7	
		Micro-project : knowledge building and representation	2		
		Micro-project : embedded camera	2		
		Robotics Challenge	4		
	French	French (FLE)	48	2	
		TOTAL S1	314	30	

MESTER 3	UV Name	Course	Teaching Hours	Course ECTS credits
	Research Project	Full Time Research Project	96	7
	Automotive Systems and Artificial Intelligence	Industrial Digital Systems Architecture	40	
		Embedded Systems for Control and Artificial Intelligence	40	7
		ESCAAI Project		
	Advanced Automatics	Theory of MPC	20	7
		Design of MPC	20	
		MPC Project	28	
SE	Machine Learning and Advanced Data Analysis	Dynamic Machine Learning	20	
		Data gathering, clustering and classi- fication	4	7
		Data fusion	12	
		Pattern recognition	8	
	French	French (FLE)	48	2
		TOTAL S3	336	30

SEMESTER 2	Course	Teaching Hours	Course ECTS credits
	Finance Analytics	15	2
	Digital Intelligence and organization transformation	54	6
	Personal Development and communication skills	18	1
	Business Plan Challenge	30	5
	International business	24	3
	French as a Foreign Language	27	2
	Supply Chain Management Tactics and Operations	15	1
	Global Logistics and Operations	15	1
	Management of Innovation and change	15	2
	Global HR Management	24	3
	Global information and international marketing	24	3
	International Project		1
	TOTAL S2	261	30

R 4	Course		ECTS credits
SEMESTER	Master thesis	6-month paid internship in industry or laboratory	30



Why industry 4.0 is a game changer?

Human versus machine: what job perspectives? With the stated goal of increasing productivity, efficiency and safety, human work has to change. Machines prove better at routine tasks, considered commonly as non-added value jobs. To maintain their workforce, companies invest in training to upskill their employees and new skills are sought such as digital and tech expertise. The talents they want to recruit will demonstrate transversal and soft skills such as communication, leadership, problem solving, management, negotiation, analytical thinking and adaptability skills.



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