IMT Nord Europe
École Mines-Télécom
IMT-Université de Lille

Master of Science in Eco-Design and Advanced Composite Structures

Master's Degree in Science

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

Composite industry is a highly-technical and innovative sector on the rise, sensitive to the ecological transition. Its main concern is to control life cycle and environmental impact of products and to continue its exponential growth.

The MSc in Eco-Design and Advanced Composite Structures enables students to **develop extensive experience in composite industry**, especially sought-after in this highly-technical domain. The courses provided in this master's degree directly respond to industrial issues, including material and design choices to address a book of requirements, industrial designing tools, the control of the process and cycle times. To become a complete engineer, one semester 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.

Students from Eco-design and Advanced Composite Structures are project-focused. Our laboratories bring together the technical resources required to experience, on a real-world scale, composite development: technological platform, computing and calculation resources, physical and mechanical behaviour characterisation, cluster computing, etc.

- **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

#IMTomorrow

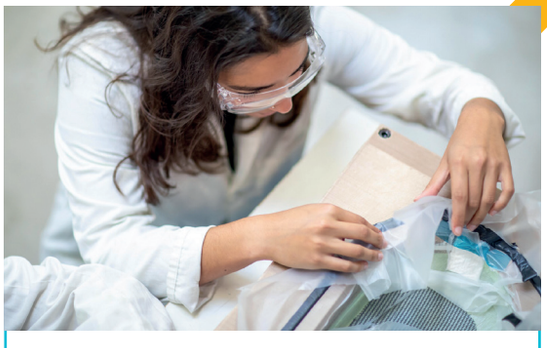
#IMTNordEurope

	UV Name	Course	Teaching Hours	Course ECTS credits
SEMESTER 1	Material Structures and Processes	Materials classification and applications	4	N/A
		Polymer Structures and Properties	10	1
		Composite Materials	12	2
		Rheology	16	2
		Composite Manufacturing	16	2
		Extra firm visit – under completion		
	Numerical Design	Linear Elasticity	36	2
		Finite Elements applied to part design	30	2
		Design Project on CAD and FEA tools	40	3
	Innovation Project	Innovation Project	80	7
	Innovative Polymers and Composites materials and Structures	Physico Chemical Characterization of Polymers and Composites	24	2
		Smart and Advanced Polymeric and Composites Materials	24	1.5
		Conferences and littérature project	40	2
		Plastics and composites recycling	4	0.5
		Labtime	8	1
	French	French (FLE)	48	2
		TOTAL S1	**344**	**30**
	Sport	Sport	24	Optional

	Course	Teaching Hours	Course ECTS credits
SEMESTER 2	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**

	UV Name	Course	Teaching Hours	Course ECTS credits
SEMESTER 3	Research Project	Research Project	92	7
	Composites Processes Modeling	Composite processes modeling	16	1.5
		Modeling of thermoplastic injection process	14	1.5
		Composites modeling project	16	2
		Additive Manufacturing, Prototyping	8	1
		Laser processes	16	1
	Characterization Methods for Numerical Material	Numerical Materials	20	1
		Material Behavior Modeling	48	3
		Abaqus Project	8	3
	Mechanics of Composites and Sandwich Structures	Mechanics of composites and sandwich structures	20	2
		Thin Structure Modeling	20	2
		Advanced Finite Elements	36	2
		Study Case		1
	French	French (FLE)	48	2
		TOTAL S3	**314**	**30**
	Sport	Sport	24	Optional

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



Do you know composite material ?

From fibers (carbon, glass or natural fibers) and a polymeric resin, they are 5 times lighter than metals with equivalent performances and can offer plenty of design and manufacturing solutions!

2023-2024 expected schedule, subjected to changes.

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