



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



Master of Science in Advanced Design and Management of Durable Constructions

Nowadays, one of the first challenge of our society is to reduce the impact of its activities on the environment and therefore support a sustainable development. The construction industry has a major role to play innovating with the use of recyclable and renewable materials in building projects, as well as minimizing energy and waste production.

The MSc in Advanced Design and Management of Durable Constructions (ADMDC) enables students to develop their expertise in civil engineering learning new ways of building making use of innovative, efficient, bio-sourced, sustainable materials with a low environmental impact. Waste for example, consisting of base materials forms a free resource, capable of providing clean and sustainable materials.

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, and thanks to our laboratories students will be offered the technical resources required to experience, on a real-world scale, sustainable development in construction: 3D printing, smart home concept, mobilisation of data for managing durable constructions...

Besides, to become a complete engineer with the ability to manage large-scale projects, one semester in Institut Mines-Télécom Business School (IMT-BS) is dedicated to the development of management and communication skills and to the acquisition of knowledge in the fields of business, finance and logistics. IMT Business School is located in Evry, south of Paris.

To facilitate the immersion of its international students in France, IMT Nord Europe offers accomodation solutions in Douai and Evry and a personalized support throughout their education.

- 100% taught in English
- 2 years on Campus
- 6-month internship

Tuition Fees:

- 6,500 €/year (non E.U Students)
- 4,500 €/year (E.U Students)
- Possible scholarship opportunities



Admission Process

Application Form and Interview
Deadline: June 30th, 2026
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.

SCHOOLING PROGRAMME

Educational content of knowledge and skills blocks (KSB):

Analyzing Material Durability

- By evaluating the strength and lifespan of natural geomaterials as well as traditional and innovative materials exposed to different environments
- By conducting laboratory tests on the degradation and reparability of construction materials.
- By integrating life cycle assessment (LCA) methods to compare the environmental impact of materials.
- By proposing maintenance and repair solutions to enhance the longevity of structures.

Leveraging Data for Sustainable Construction Management

- By collecting and processing data from construction projects (performance, energy consumption, emissions).
- By using modeling and data management software (BIM, specialized digital tools).
- By building dashboards to monitor sustainability and structural performance.
- By analyzing real datasets to guide decisions on design, materials, and project management.

Designing Sustainably

- By integrating environmental and social criteria from the early design phases.
- By evaluating and comparing multiple design scenarios based on their technical, economic, and ecological impacts.
- By leveraging BIM and digital modeling to simulate sustainable design alternatives.
- By guiding and coordinating project teams toward solutions that optimize durability, reparability, and recyclability.

Using Innovative Construction Materials

- By studying the mechanical, thermal, and environmental properties of bio-based, composite, or recycled materials.
- By testing the strength and specific behaviors of innovative materials in the laboratory.
- By comparing the performance and costs of traditional and innovative materials for a construction project.
- By incorporating innovative materials into structural design to address sustainability and performance challenges.

Using 3D Printing in Construction

- By exploring emerging technologies applied to civil engineering, particularly 3D printing of concrete and composites.
- By designing and modeling parts or structural elements intended for additive manufacturing.
- By studying real cases of construction sites or prototypes using 3D printing to optimize timeframes, costs, and environmental impact.
- By comparing the mechanical and long-term performance of elements built traditionally and through 3D printing.

Do you know durable constructions ?

Within a changing environment, society has to adapt itself towards a more sustainable approach of building. Materials reuse, inspiration from traditional and secular materials, design of new low-CO2 materials, are now of uttermost importance. By integrating all those practices into modern data science, the ADMODC master offers a complete training for the future of the construction area.



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