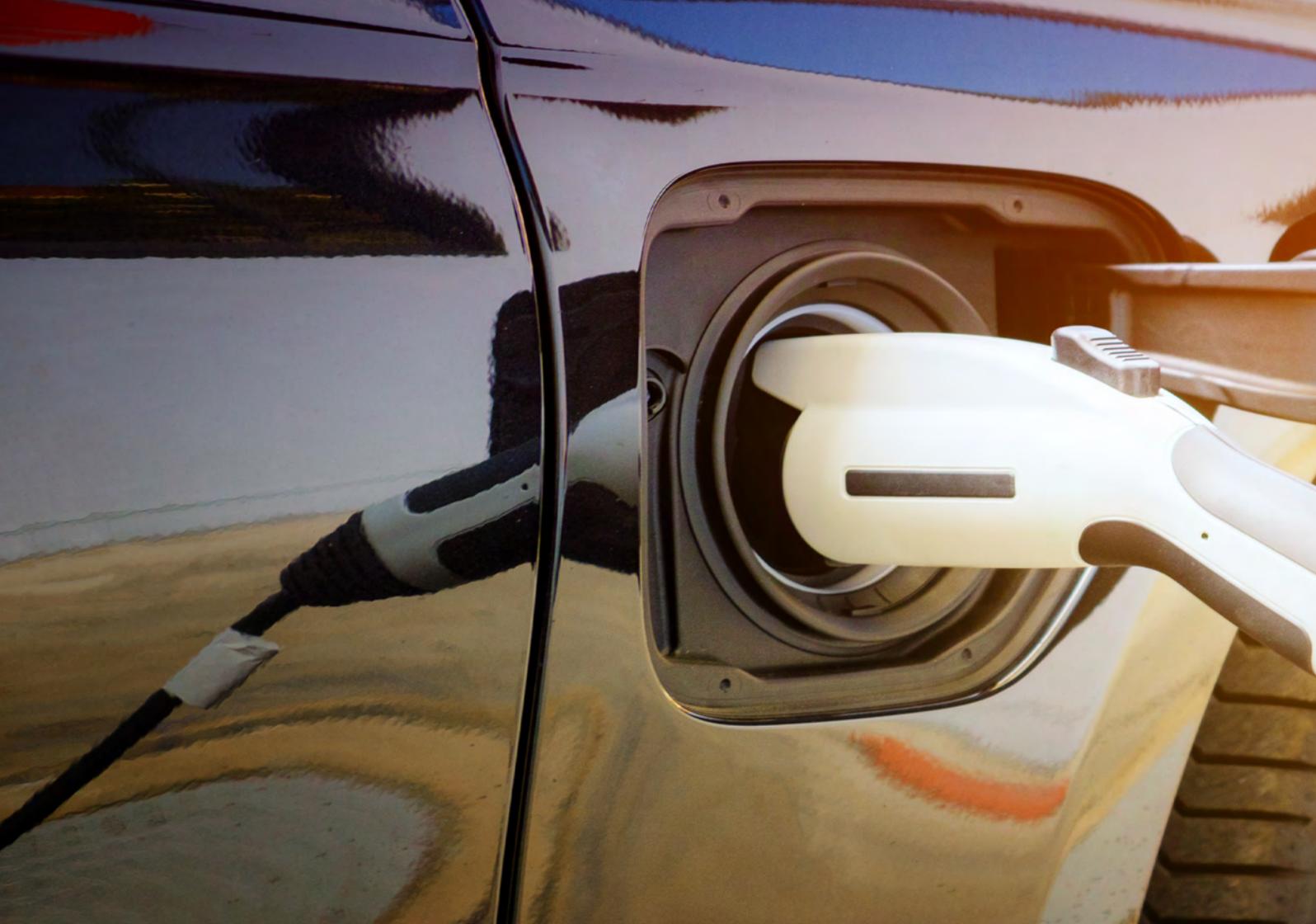




UNIVERSITÀ
DI TRENTO

MSc in Materials Engineering



Master of Science in Materials Engineering

The Master's degree in Materials Engineering aims to train professionals with in-depth knowledge and understanding of the **processes, properties, development and applications of materials**, the conception, design and development of **innovative products**, the management of the life cycle of products in line with the sustainability demands of the modern manufacturing industry. Through an interdisciplinary approach, the course promotes and implements the principles of sustainability and the **circular economy**.

Graduates will master modern technologies, systems and infrastructures for the **design and production** of traditional and **innovative materials** and will be able to implement them in the chemical, rubber and plastic industry, as well as in the mechanical, metallurgical, textile, opto-electronics and biotechnology sectors.

The **different tracks** offered by the programme train graduates for specific areas of Industrial Engineering: biomaterials and biomedical technologies, materials and production processes, energy storage and transport, materials and technologies for the manufacturing industry, materials and processes for the automotive and transport industry, nano-materials, nano-technologies and surface engineering.

The program is specially designed for students who already have **solid knowledge in the field of industrial engineering**.

Programme overview

Degree awarded

Master of Science - "Laurea Magistrale" - in Materials Engineering

Language

English

Class Size

Up to 25 students

Workload

The total workload for each student is 120 ECTS (European Credit Transfer System)

Intake

September each year

Duration

2 years full-time

Fees and funding (approximate range)

- EU: 340€ - 3.400€ (based on income/merit)
- Non-EU: 1.000€ - 4.500€ (based on merit)
- Income/merit based scholarships and tuition waivers available

Admission

Application deadlines (check online for updates)

- February for non-EU citizens living outside Italy
- From June to November: rolling admission for EU citizens and non-EU citizens regularly living in Italy

How to apply

- Access the online application form
- Upload the required documents
- Submit your online application by the deadline
- Check online for more information and updates: www.international.unitn.it/mastermat

Selection criteria

- Coherence between applicant's previous studies and the academic objectives of the Master's degree program
- Academic curriculum
- English language competence

Requirements

- Bachelor's degree in any discipline or related field of Materials Engineering, along with a corresponding study plan which proves acquired basic competencies in Mathematics, Physics, Chemistry and Industrial Engineering.
- English at B2 level of the Common European Framework of Reference for Languages

Study Plan

During the first year, common courses aim to provide students with a **solid foundation in chemistry, solid state physics, properties and structures of different classes of materials and their productive processes.**

Manufacturing and Product Development

Focuses on production and processing technologies, damage mechanisms in operation, and the design methods and tools used in the manufacturing industry for the optimization of current processes and products and the development of new innovative ones.

Energy, Environment and Sustainable Development

Focuses on materials and processes for the production and transformation of energy, the reduction of energy consumption through innovative technologies and materials, reuse and recycling to reduce the environmental impact of production and transformation processes.

Engineered Materials and Biomedical Applications

Focuses on materials for biomedical and functional applications, including bio-inspired and biomimetic materials. The course aims to train professionals who, in addition to the key skills for materials and production engineers, have interdisciplinary knowledge of the different classes of materials for biomedical use, their manufacturing process, their properties and advanced applications.



For all curricula

- Laboratory practice
- Elective courses
- Other activities
- Final thesis

Extracurricular activities (for all curricula)

Activities related to the Career Boosting Program:

- Company tours
- Company presentations
- Company awards and scholarships

Dual Degrees

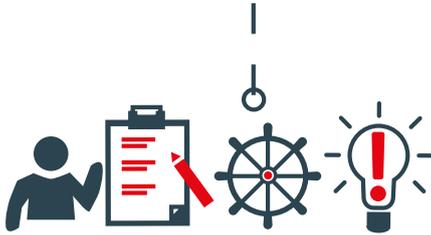
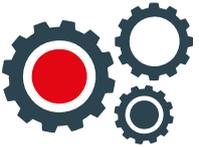


This Master's course offers its students the opportunity to participate in joint Double Degree programs with the following universities:

- Instituto Superior Técnico, Lisboa (Portugal)
- Technische Universität München (Germany)
- Ecoles Centrales Lille/Lyon/Nantes/Marseille, CentraleSupélec-Paris (France)
- EIT Raw Materials Sustainable Materials, KU Leuven (Belgium), INP Grenoble (France), Montanuniversität Leoben (Austria)

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Career opportunities



MANAGEMENT

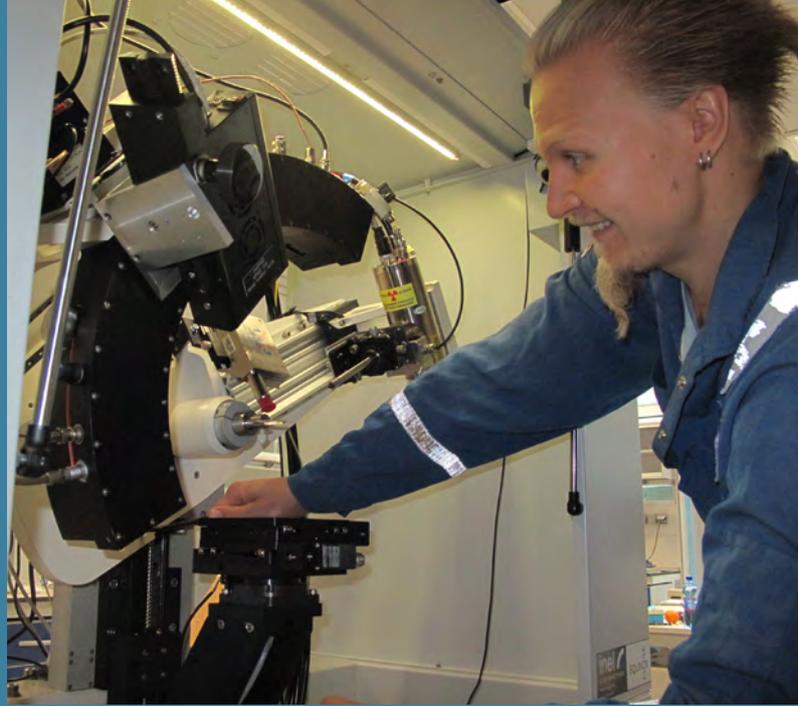
Graduates with a Master's degree in Materials Engineering will be a valuable human resource in a variety of areas, such as the entire manufacturing sector, the transformation and process industry, public and private research focused on materials and technologies, design firms, consultancy and services companies as well as public administration.

Master graduates will be able to carry out high-level technical and entrepreneurial activities. They will be able to oversee the entire industrial production system from product design to marketing. They can be employed among all the phases of the life cycle of a product, from the general design to the production of the material to the management of the manufacturing process, its operating behavior and the end of life through proper recycling, reuse or disposal.

Graduates may pursue a PhD in Trento (Materials, Mechatronics and Systems Engineering or Industrial Innovation), elsewhere in Italy or at the international level.

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CONTACT DETAILS

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