Course structure

120 ECTS 2 years

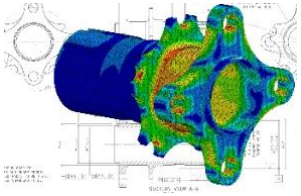
Mandatory teachings are offered in the fields of Mechanics of Materials, Innovative Metallic Alloys, Advanced Thermodynamics, Dynamics and Vibrations, product and Manufacturing Engineering, Assembly Systems and Logistics, Product Development and Innovation.
The Program is completed with several teachings focused in the following tracks:

Advanced Mechanical Design: with the aim of providing knowledge related to the latest mechanical design and simulation methodologies.

Smart Digital Manufacturing: with the aim of providing knowledge related to the engineering design of advanced and automated manufacturing systems.

Sustainable Materials and Design: with the aim of providing knowledge related to industrial and product sustainability.

Multiphysics Simulation: with the aim of providing knowledge related to the advanced numerical simulation of innovative products in several fields of mechanical engineering.



UNIVERSITY OF PADOVA

The University of Padova, founded in 1222, is one of Europe's oldest and most prestigious seats of learning; it is a multi-disciplinary university that aims to provide its students with both professional training and a solid cultural background.

About DTG

The Department of Management and Engineering was established in 1998. Its activities encompass engineering, technological, and economic competences required for the development of new products, materials, and production processes, with a focus on technical management and economic profitability. The Department actively participates in the teaching programs of the School of Engineering, including the master's degree programs in management engineering, mechanical engineering for product innovation, mechatronics and food industry engineering.

dtg

Dipartimento di
Tecnica e Gestione
dei sistemi industriali
Università di Padova

Master's Degree in

MECHANICAL ENGINEERING

FOR PRODUCT INNOVATION

Second Cycle Degree

VICENZA
CITTÀ
UNIVERSITARIA

COURSE DESCRIPTION

The Master's Degree in Mechanical Engineering for Product Innovation is a modern Mechanical Engineering Program, focusing on key areas of mechanical innovation, such as innovative materials (metal alloys, polymers, composites, nanomaterials), the latest mechanical design and simulation methodologies (static, fatigue, dynamic, thermal, aerodynamics) and the most advanced manufacturing processes and logistics systems. The Master program offers both theoretical courses and high level applied or research-oriented teachings within a framework of industrial competitiveness and sustainability, providing students with advanced knowledge and skills to model, design, and manufacture the products, processes, and industrial systems of the future.

COMPETENCIES

The main competencies are related to:

- Designing innovative products in terms of materials and design solutions
- Designing high-performance dynamic mechanisms and machines
- Developing innovative thermal exchange systems
- Innovating the technological cycle of product manufacturing and assembly
- Designing product logistics
- Conducting feasibility studies for products, processes and plants.

The educational objectives are strongly oriented towards advanced mechanical design techniques, the knowledge of both conventional and innovative materials (polymers, composite materials, nanomaterials, and advanced metal alloys) and cutting-edge manufacturing technologies and logistic systems.

To this end, it is important to emphasize that the study topics are aligned with the expertise of various internationally renowned research groups, carrying out high level theoretical, numerical and experimental research activities in the advanced laboratories of the Department, which will also be significantly adopted for research or application-oriented lectures.

PROFESSIONAL OPPORTUNITIES

Graduates can work both in Italy and internationally in technical and managerial positions in the areas of advanced design, research and development, quality control, innovation and production development, planning and scheduling, management of complex systems. They can be enrolled in manufacturing or service companies in several industrial sectors, such as:

- mechanical engineering industry, automotive and aerospace industry, metalworking industry, rubber and plastic industry
- textile, clothing, and leather industries

- Industries for the manufacturing of machinery and mechanical systems, wood and furniture
- energy related industries (cooling and heating systems, wind energy etc.)
- Industries for the production and distribution of electricity, gas, and water
- Manufacturing of medical, surgical, and orthopaedical devices, household appliances

ACCESS REQUIREMENTS

- Bachelor's degree (or equivalent) in Engineering or related fields, with proven skills in Mechanical Engineering
- English language: B2 level (CEFR) or equivalent.

PLACE AVAILABLE

There is no numerical limit for both EU citizens and non-EU citizens.

DOUBLE DEGREE

Double Degree program with KU Leuven University allows selected students to have double degree at University of Padova and the prestigious Belgian University.

KU LEUVEN

APPLICATION

For Italian Qualification: https://goo.by/FsPfXg

For Foreign Qualification https://apply.unipd.it/

MECHANICAL ENGINEERING
FOR PRODUCT INNOVATION
MAKE IT NEW,
MAKE IT BETTER!

WEBSITE