Laurea Magistrale

Mechanical Engineering
Reasons to choose Mechanical Engineering

The Mechanical Engineering study programme is more than 150 years old, as old as Politecnico di Milano. With the transformations that industries are experiencing, the need for technical knowledge and technological resources is constantly growing. For this reason, alongside a great tradition, the study programme has been continuously updated to stay at the edge of innovation and technological development, as confirmed by the international rankings which see Politecnico di Milano in the first place in Italy and among the top ten universities in the world in Mechanical Engineering.

The role of the mechanical engineer in modern industries is still fundamental and in continuous evolution: the mechanical engineer is a key actor in innovation and industrial transformation processes in almost every many sector: automation, aerospace, vehicles, biomedical and ICT. Given the great variety of skills required in the job market, the mission and goals of the Laurea Magistrale in Mechanical Engineering is to train professionals with a solid foundational base, a good scientific method and broad technical and applicative knowledge. Mechanical engineers handle the planning, creation, use and management of machines (whether these machines are separate or part of a system), and therefore need to have in-depth technical background. This path allows to create flexible profiles, which adapt to constantly changing industrial systems.

The M.Sc Degree in Mechanical Engineering is offered in the Milan Bovisa, Lecco and Piacenza campuses.

What can I do with my degree?

Graduates with a M.Sc. in Mechanical Engineering at Politecnico di Milano find employment, obviously, in the mechanical industry but also in the transport sector, in the energy industry, in plant engineering, in logistics and in consultancy. The multidisciplinary preparation means that this professional figure can adapt very well to the changes of the positions offered in the job market, and more and more the mechanical engineer is called for new challenges and professions. In recent years, new issues of global interest, such as industry 4.0, mobility, sustainability, have required, at various levels, the skills of mechanical engineers.

The Politecnico di Milano Mechanical Engineering study programme occupies the top positions worldwide, in the special ranking relating to the reputation that employers have of our graduates.

For Master of Science graduates in Mechanical Engineering, who can specialize in one of the nine possible themes envisaged in our course of study, the employment rate, one year after graduation, is equal to 98%.
What is being studied?

Given the great variety of skills required in the job market, the mission and goals of the Laurea Magistrale in Mechanical Engineering is to train professionals with a solid foundational base, a good scientific method and broad technical and applicative knowledge. The level of cultural education is raised during the first year by broadening the students’ knowledge of advanced analysis methods, which in the second year are applied in specialisation subjects and a thesis. The first year of the programme is offered at both the Milano Bovisa and the Lecco Campuses and all students follow the same study plan. In the second year, students choose from among different study tracks: production systems, mechatronics and robotics, virtual prototyping, internal combustion engines and turbomachinery, advanced mechanical design, advanced materials and manufacturing, ground vehicles, machine tools and manufacturing systems, mobility engineering.

The teaching methods are constantly evolving: over the years innovative methods have been added to improve the traditional method. All students can choose multidisciplinary courses, where they can cultivate their passions to transform them into tomorrow’s work. Moreover, M. Sc. in Mechanical Engineering includes of 2 credits (ECTS) on horizontal competencies aiming at developing a deep awareness and a basic knowledge on topics that are increasingly important for the engineer profession and have no place in the traditional curriculum.

M. Sc. In Mechanical Engineering strengths

Students attend many experimental and computer labs as part of lessons in the classroom. In this way they will also be able to solve concrete problems, acquiring interdisciplinary and transversal knowledge not bound to the individual courses of the course of study. Much attention is paid to the development of soft skills useful in the world of work.

In addition, before graduating, it is possible to have a 3-4 month work experience in a company, in order to apply what has been learned.

Illustrious professors of international fame, coming from the most prestigious non-Italian universities, are invited as Visiting Professors to teach part or all of a study plan course.

Mechanical Engineering students may continue their studies, for a period ranging between one semester to two years, at a non-Italian university. The students selected for a specific programme have the opportunity to enrich their academic experience by spending a period abroad.
Laurea Magistrale
Study Plan

1st year
- Control and Actuating devices for Mechanical Systems
- Applied Metallurgy
- Energy Systems
- Advanced Manufacturing Processes
- Machine Design 2
- Mechanical System Dynamics
- Measurements
- Design and Management of Production Systems

2nd year - Tracks
- Production Systems (MI)
- Mechatronics and Robotics (MI)
- Virtual Prototyping (MI)
- Internal Combustion Engines and Turbomachinery (MI)
- Advanced Mechanical Design (MI)
- Advanced Materials and Technology (MI)
- Ground Vehicles (MI)
- Mobility Engineering (MI)
- Machine Tools and Manufacturing Systems (PC)
- Engineering Design and Manufacturing (LC)

Opportunity
Study abroad programmes - exclusive partnership

Idea League
develops cooperation programmes and projects for students, in order to enhance the quality of the skills of the people working and studying at the member institutions.

Alliance 4 Tech
Promoting common programmes and providing students with the opportunity to spend three terms in partner universities