



UNIVERSITÀ
DI TRENTO



Freie Universität Bozen
Libera Università di Bolzano
Università Lieldia de Bulsan

MSc in Energy Engineering



Master of Science in Energy Engineering

The Interuniversity Master in Energy Engineering is jointly offered by the University of Trento, Department of Civil, Environmental and Mechanical Engineering and the Free University of Bolzano-Bozen, Faculty of Engineering. The courses in the four semesters are offered alternatively in the two institutions.

Students learn to deal with the different issues and opportunities in the field of energy production and **efficient energy use**. Students learn how to address complex and advanced problems, especially those requiring an **interdisciplinary approach** in the design, implementation, management and upgrading of production systems, transport and efficient use of energy.

The **environmental sustainability** of energy consumption and the **reduced exploitation** of natural resources will be the common basis for the different disciplines involved: electrical engineering, technical physics and building physics, fluid machines, industrial engineering.

Year	Semester	Location
1	Fall	Trento
1	Spring	Bolzano
2	Fall	Bolzano
2	Spring	Bolzano or Trento

Programme overview

Degree awarded

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

Workload

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

Intake

September each year

Duration

2 years full-time

Language

English

Class size

Up to 50 students



Admission

Application deadlines

Check online for updated information:
www.unitn.it/masterenergy

Selection criteria

- Assessment of previous studies and their coherence with the master's learning objectives
- Academic curriculum
- Language proficiency
- Interview

Requirements

- Bachelor's degree (or equivalent) in Industrial Engineering or Civil and Environmental Engineering or closely related fields (min. GPA: 73% or 22/30 for degrees obtained in Italy)
- Documented background in the following areas: Mathematics, Chemistry, Physics, Thermodynamics and heat transfer, Electrotechnics, Fluid mechanics, Materials Science, Technologies and production systems, Mechanics of structures, Fluid machines
- English at B2 level of the Common European Framework of Reference for Languages [CEFR]

How to apply

- Access the online application form
- Upload the required documents (Bachelor transcript of records, language certifications, any other useful document)
- Submit your application online by the deadline
- Check online for more information and updates:
www.unitn.it/masterenergy

An aerial photograph of the cities of Trento and Bolzano in Italy. The foreground shows the dense urban landscape of Bolzano, with its characteristic red-tiled roofs and the prominent white facade of the Bolzano Cathedral (Duomo di Bolzano) and its tall, slender bell tower. The background features the city of Trento, nestled in a valley with steep, forested mountains rising behind it. A semi-transparent dark green box is overlaid on the top left of the image, containing the text 'Study Plan' and '1st year'.

Study Plan

1st year

1st semester (in Trento)

- Electrical Systems Engineering
- Fluid Machines Engineering
- Applied Energetics
- Environmental Fluid Mechanics/ Hydropower Plants

2nd semester (in Bolzano)

- Building HVAC Systems
- Advanced Applications of Building Physics
- Electric Power Conversion Equipment
- One of the two courses: Italiano Tecnico/Technisches Deutsch



2nd year

1st semester (in Bolzano)

Curriculum

TECHNOLOGIES FOR ENERGY EFFICIENCY

- Power production, CHP and district heating systems
- Special Issues of Building Physics

One of the two courses:

- Applied Mechanics and Technologies for Energy Efficiency
- Solar Energy and Smart Water Systems

Curriculum

RENEWABLE AND INNOVATIVE TECHNOLOGIES FOR ENERGY SUPPLY

- Power production, CHP and district heating systems
- Hydropower and Wind power systems

One of the two courses:

- Advanced materials for Energy Engineering
- Mechanics and Structural Design for Energy Engineering

2nd semester (in Trento)

Curriculum

TECHNOLOGIES FOR ENERGY EFFICIENCY

- District heating system design

Curriculum

RENEWABLE AND INNOVATIVE TECHNOLOGIES FOR ENERGY SUPPLY

One of the two courses:

- Electrochemical energy storage and conversion
- Bioenergy

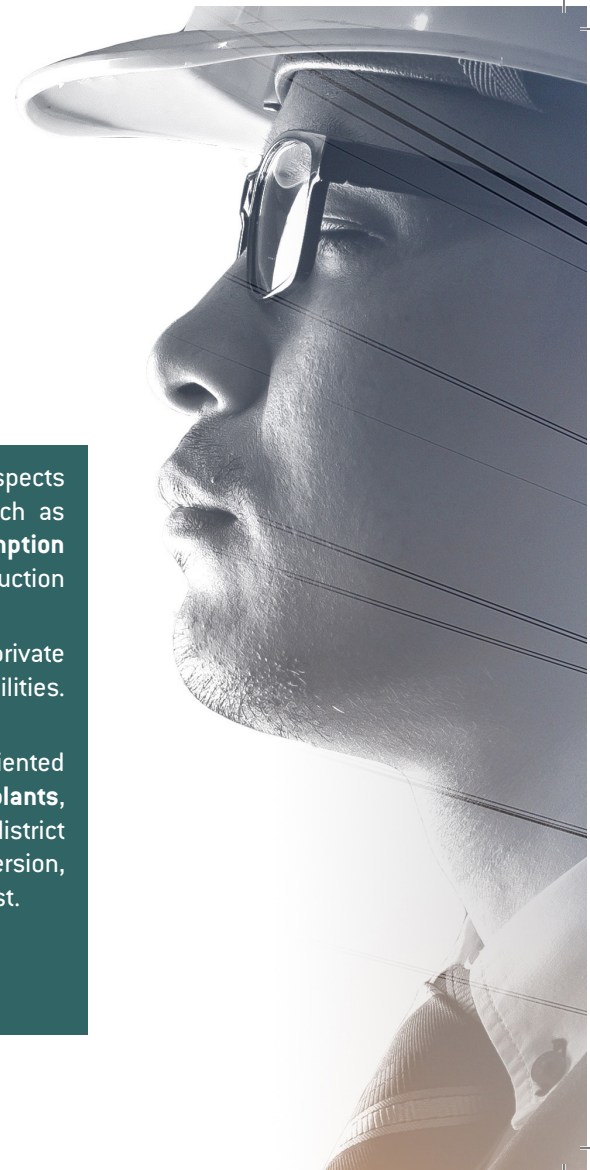
Elective courses and the master thesis in the 2nd year 2nd semester can be taken either in Bolzano or in Trento

Career opportunities

Graduates in Energy Engineering will be **recognized experts** in various aspects of planning, implementing and managing **integrated energy systems**, such as production plants supplied from renewable sources, **low energy consumption** buildings and **transport networks** for electric and thermal energy from the production site to local consumption sites.

Energy engineers will work as independent professionals or in public and private companies, industries of the energy and HVAC sectors and public and private utilities. Graduates can move on to **Doctoral Schools**.

The professional profile of the master graduate in Energy Engineering is oriented towards the design and operation of small to medium size **energy production plants**, in particular exploiting **renewable sources**, combined heat and power (CHP) in district heating, and of energy efficient industrial systems and buildings. Energy conversion, energy distribution and energy utilisation systems are the main areas of interest.









CONTACT DETAILS

International Mobility Office

Science and Technology Area

Via Mesiano, 77 - 38123 Trento, Italy

tel. +39 0461 282587

masterenergy@unitn.it

www.unitn.it/masterenergy