Università di Genova
DIME DIPARTIMENTO
DI INGEGNERIA MECCANICA, ENERGETICA,
GESTIONALE E DEI TRASPORTI

Master Degree in Energy Engineering

Corso di Laurea Magistrale in Energy Engineering

Prof. Giorgio Zamboni, Head of Programme/Coordinatore del Corso di Laurea

Why Energy Engineering?

Energy is at the core of our life

- Energy is needed in industry, transportation, buildings (cooling/heating), services, etc.
- Energy means production, conversion, management, storage, transmission
- Focus on sustainable and renewable sources
- What is required to Energy engineers? Strong knowledge and competences, open mind to innovations, critical approach

Energy Engineering overview

- The Course is held in Savona Campus
- All the modules are taught in English
- Free English courses are offered to En2 students
- More than 50% of En2 students comes from abroad

General contents of En2 course

The course is designed for students seeking high qualification in:

- Energy conversion processes from chemical, bio-chemical, thermal sources into mechanical and electrical ones
- Sustainable & Distributed Energy: smart power grids, renewable energy (solar, geothermal, wind, hydro), fuel cells, bio-fuels, energy management
- Sustainable Development: energy audit in buildings, biomass exploitation, CO_2 sequestration, LCA analysis, energy from waste

Programme – First year

Mathematical Modeling for Energy Systems (6 ECTS)

Heat Transfer (6 ECTS)

Chemical Plants and Processes for Energy (12 ECTS)

- Chemical Processes and Technologies (6 ETCS) + Chemical and Biochemical Processes and Plants for Energy (6 ETCS)

Electric Power Systems (12 ECTS)

- Power Systems Modeling and Control (6 ETCS) + Power Systems Management (6 ETCS)

Industrial Fluid-dynamics and Combustion (12 ECTS)

- Industrial Fluid-dynamics (6 ETCS) + Combustion Process and Emissions (6 ETCS)

Power and industrial plants for energy (12 ECTS)

- Industrial Plants for Energy (6 ETCS) + Power Plants for Energy Generation (6 ETCS)

Programme – Second year

Renewable Energy in Buildings (12 ECTS)

- Energy and Buildings (6 ETCS) + Solar and Geothermal Energy (6 ETCS)

Machines and Systems for Renewable Energy (12 ECTS)

- Fuel Cells and Distributed Energy (6 ETCS) + Hydro, Wind and Micro-Gas Turbines (6 ETCS)

Models and Methods for Environmental and Energy Engineering (6 ECTS)

Energy Laboratory (6 ECTS)

Master Thesis (11 ECTS)

Training and Orientation (1 ECTS)

Programme – Elective courses (2 out of 4)

Advanced Propulsion Systems for Low Environmental Impact (6 ECTS)

Project Management for Energy Production (6 ECTS)

Power Systems Simulation and Optimization (6 ECTS)

Remote Sensing (6 ECTS)

Double Degree EMESB

In December 2016 En2 - UniGe started a Double Degree programme with the University Savoie Mont Blanc – Polytech Annecy-Chambery

European Master in Energy and Sustainable Buildings, EMESB, focused on Solar and Buildings

http://www.en2.unige.it/double-degree-emesb/

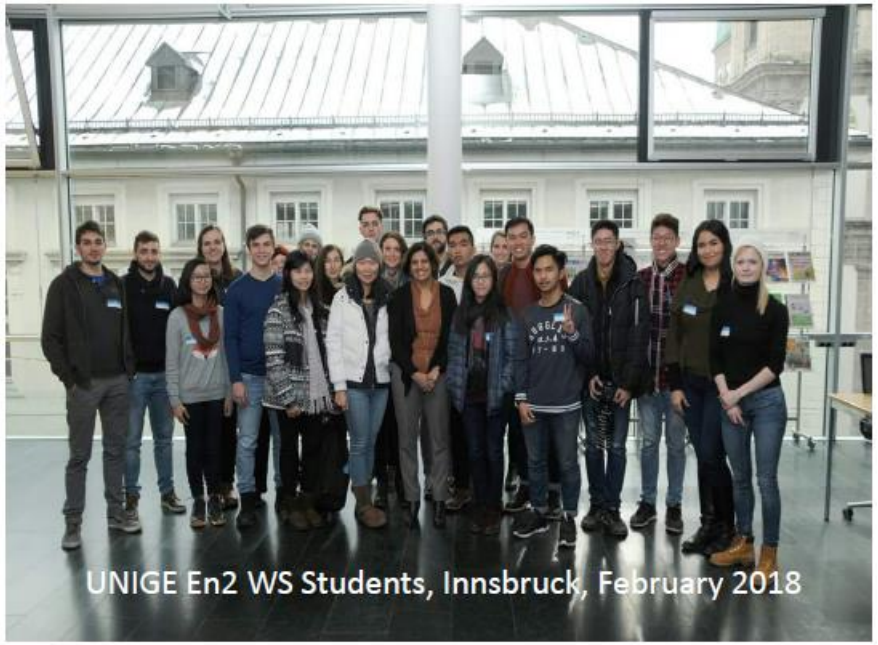
Students from Unige and University Savoie Mont Blanc at Bourget sur Lac, January 2018

Double Degree EM3ES

In September 2018 En2 - UniGe started a Double Degree programme with the Management Centre Innsbruck

European Master in Engineering for Energy and Environmental Sustainability, EM3ES, focused on energy management, with special attention to chemical process and biomass conversion

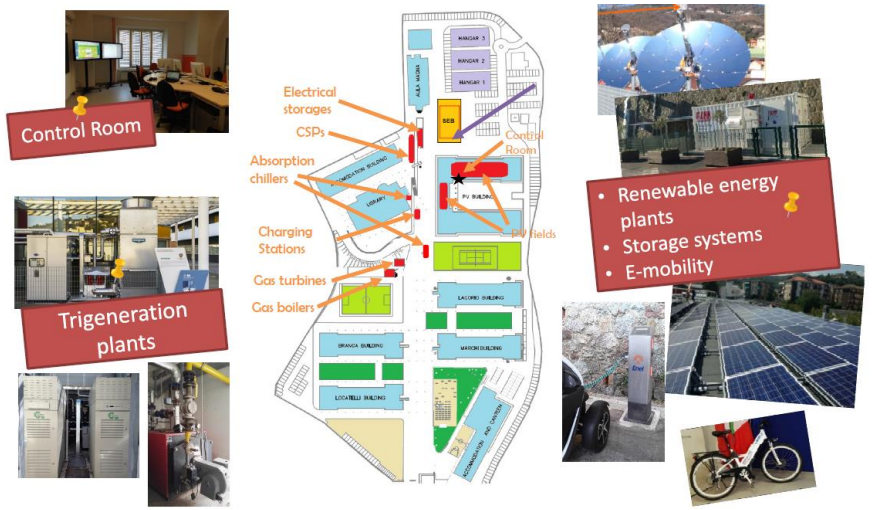
http://www.en2.unige.it/double-degree-em3es/



UNIGE En2 WS Students, Innsbruck, February 2018

Energy 2020 project in Savona Campus

http://www.energia2020.unige.it/en/



- Smart Polygeneration Microgrid (SPM, with Siemens)
- Smart Energy Building (SEB, with Siemens)
- Energy Efficiency Measures (EEM)
- Smart City Demo Campus (SCDC)

For more information

https://courses.unige.it/10170

http://www.en2.unige.it