

CONTACT

For enquiries, please contact the **Course Coordinator**:

- **Msc Course Coordinator**

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- **Dime Student Office**

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- **WEB resources**

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- **Educational Supervisor (Manager Didattico)**

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- **Tutoring and Training Delegate**

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- **Address**

Savona Campus

Via Magliotto 2, 17100 Savona, ITALY

• **General statistics on graduate students and career opportunities:**

AlmaLaurea:

<http://www.almalaurea.it>

Unioncamere-Ministero del lavoro:

<http://excelsior.unioncamere.net/>

Consiglio Nazionale degli Ingegneri:

<http://www.centrostudicni.it/>



UNIVERSITÀ DEGLI STUDI DI GENOVA

Scuola Politecnica

INGEGNERIA

<http://www.politecnica.unige.it>

VIA MONTALLEGRO, 1 - 16145 GENOVA

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Msc Course in

ENERGY ENGINEERING

Corso di Laurea Magistrale in

ENERGY ENGINEERING

Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti

www.dime.unige.it

VIA MONTALLEGRO, 1
VIA DELL'OPERA PIA, 15 e 15A - 16145 GENOVA

The Engineer develops the scientific knowledge, the related technologies and materials in order to design and build devices and plants able to fulfil the society needs and people wishes

MSc IN ENERGY ENGINEERING

The Master of Science (MSc) course in Energy Engineering is aimed at students trained as general engineers with skills on the new technologies relevant to the energy conversion and its rational use. Candidates will be required to plan, design and manage energy systems blending creative solutions with up-to-date technologies relative to energy conversion and efficiency enhancement.

At the end of the course, engineers will be good at operating in the current technological/industrial environment - i.e. a dynamic and competitive one - and sensitive to the main industry, environment and security issues and standards.

The main aim of the course is to offer an in-depth theoretical and practical understanding of the most advanced energy conversion technologies, including renewable energy generation and energy storage.

WHAT WILL YOU STUDY AND FUTURE PROSPETS

The course consists of modules that include thermo-fluid dynamics and thermo-chemical dynamics, as well as fluid machinery and energy conversion systems (co-generation, fuel cells, power plants from renewable energy sources and smart grids), traditional energy and civil engineering plants, electric networks, economics, available and emerging technologies for reducing greenhouse gas emissions and environmental monitoring.

A rising interest in and increased urge for 20/20/20 policies in Europe has resulted in a growing industrial demand for highly qualified Energy Engineers with a sound knowledge and specific skills to analyze, design and develop effective solutions in a broad range of contexts. Furthermore, in the last few years both emerging industrial countries and developing ones have increa-

sed their awareness of environmental issues and energy production and started implementing large energy engineering projects thus boosting the job opportunities worldwide.

The course is aimed at students seeking high qualification in the following main fields:

- Energy conversion processes from chemical, biochemical, thermal sources into mechanical and electrical ones
- Sustainable & Distributed Energy: renewable energy (solar, geothermal, wind, hydro), fuel cells, bio-fuels, smart power grids, low emission power plants
- Sustainable Development: CO₂ sequestration, LCA analysis, biomass exploitation, Energy Audit in buildings, energy from waste, recycling, modelling and experimental techniques devoted to optimum energy management.

The MSc course work in partnership with industries and research institutes in Liguria, in Italy and abroad.



ENTRY REQUIREMENTS

In response to this growing demand of expertise the University of Genoa MSc in Energy Engineering (120 ECTS) at Savona Campus has been conceived for either engineers or science students.

A minimum of either BSc or higher degree in a relevant branch of industrial engineering is required.

WHAT DOES THE MASTER IN ENERGY ENGINEERING OFFER TO ITS STUDENTS

In the last years both industrialization and population growth have brought to a higher demand for sustainable energy, smart energy management with reduced environmental impact.

As a result the MSc Energy Engineering was born out of the need to better cope with Sustainable Development issues and progress in energy conversion technologies, including renewable energy generation and energy storage, NZE buildings, with an increasing attention devoted to greenhouse gas emissions reduction through a multidisciplinary approach.

This MSc course is taught in English and students are supported in achieving higher English language skills. The University of Genoa set its modern campus in Savona and in the last few years, public and private funds have been invested to improve its infrastructures, sport facilities, hall of residence, library and an auditorium.

The University of Genoa and Siemens jointly developed a smart polygeneration microgrid in Savona Campus - officially commissioned on February 2014.

Since then the campus has largely generated enough power to satisfy its own needs with the help of several networked energy producers, i.e. total capacity 250 kW of electricity and 300 kW of heating.

The grid includes micro gas turbines, absorption chillers, a photovoltaic plant, a solar power station and electrochemical and thermal storage systems.

This huge facility together with a series of laboratories located at the Campus (e.g. Combustion Lab, Energy Hub Lab) offer the students a unique opportunity for hands-on activities, e.g. to measure and investigate the performance of real scale innovative energy systems.