



HySET – Hydrogen Systems and Enabling Technologies: the first Hydrogen Technology Master of Science

Starting in September 2023, this Master of Science responds to the demand for over one million high-profile professionals with multidisciplinary knowledge in the hydrogen technology sector by 2030.

<https://www.hysetmaster.polito.it/>

Hydrogen technology plays a key role in reducing carbon emissions and will be part of the mosaic of solutions needed to mitigate climate change. Specifically, green hydrogen is the link between renewable sources and end users to achieve decarbonisation objectives in the areas of energy conversion and storage, industrial use, and mobility.

The **HySET – Hydrogen Systems and Enabling Technologies** (<https://www.hysetmaster.polito.it/>) project initiated and coordinated by Professor Massimo Santarelli of the **Politecnico di Torino (Italy)**, has designed a master's degree course with academic partners **Politecnico di Milano (Italy)**, **Eindhoven University of Technology (The Netherlands)**, **Norwegian University of Science and Technology (Norway)** and **Universitat Politècnica de Catalunya (Spain)**, which is entirely dedicated to the hydrogen supply chain. The educational program will be jointly provided by the 5 academic partners.

The project is funded under the historic and important European Erasmus+ programme, within the 2022 call of the KA2 - EMJM Action dedicated to academic courses jointly provided by university partnerships.

The Master of Science involves in the consortium industrial partners operating in the energy sector, in the role of Associate Partner, such as **SNAM (IT)**, **REPSOL (ES)**, **SHELL (NL)** and **SINTEF (NO)**, together with safety and reliability expert **SAFETEC (NO)**.

The European Union strategy plans to achieve the decarbonisation objectives for 2050 by a 24% increase in the use of green hydrogen. This reduces CO₂ emissions by 560 Mt per year and creates an economic value of 820 billion Euro per year. To achieve this goal, the EU has planned to **create around 1 million high-profile jobs by 2030**, with a forecast of 5.4 million by 2050.

The main purpose of HySET is therefore to train professionals and researchers with multidisciplinary knowledge in the hydrogen sector and related systems, in an international and multicultural environment, in order to stimulate global collaboration capable of responding to the complex challenges arising in the energy transition. The active cooperation between academia and business is one of the strengths of this programme. and is also open to the involvement of additional academic and industrial partners.





HySET master program intends to cover the entire hydrogen value chain: hydrogen production technologies, storage technologies, transport/logistics/infrastructure, hydrogen end-uses (stationary, transport, industrial, residential and fuel cells), safety, codes and standards including the socio-economic aspects that may result from a transition to the use of hydrogen.

The first edition of the Master of Science HySET will be launched in September 2023 and continue for four editions, supported by the European Union funding 15 scholarships each year, and will continue in the consecutive years with public funds.

The HySET programme consists of 120 ECTS in total. In the first year the selected students will acquire 60 ECTS fundamental and industrial knowledge, studying in one of the two university entry points (POLITO or POLIMI). In the second year, again acquiring 60 ECTS, the students will transfer to one of the other partner universities where they will first follow specialization courses, and then proceed with a company Internship and the Final Thesis in an international context.

More details on Erasmus+ activities are available at: <https://erasmus-plus.ec.europa.eu/>



Politecnico di Torino



POLITECNICO MILANO 1863



NTNU

Norwegian University of Science and Technology

TU/e



UNIVERSITAT POLITÈCNICA DE CATALUNYA BARCELONATECH



REPSOL



safetec



SINTEF



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<https://www.hysetmaster.polito.it/>

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