

Rector**POLITECNICO**
MILANO 1863

HAVING REGARD TO Politecnico di Milano's Articles of Association;
HAVING REGARD TO Ministerial Decree 3.11.1999, no. 509;
HAVING REGARD TO Ministerial Decree 22.10.2004, no. 270;
HAVING REGARD TO the University's Educational Rules - Regulations;
HAVING REGARD TO the Regulation of Specialising Masters of Politecnico di Milano issued with Rector's Decree no. 2235 of 05.08.2013;
HAVING ACQUIRED the favourable opinion of the Academic Senate during the meeting on 21.11.2022, on the establishment and activation of proposals for Specialising Masters, including the "ENERGY INNOVATION" first-level Specialising Master's.

DECREES

That the "ENERGY INNOVATION" first-level Specialising Master's has been established and activated for the academic year 2023/2024.

ART. 1

Master's features

The "ENERGY INNOVATION" first-level Specialising Master's has been established and activated at the Energy Department.

The Academic Programme is provided by the Energy Department. The reference school is the School of Industrial and Information Engineering.

The Specialising Master's Director is Professor Alfonso Niro. The Vice-Director is Professor Giovanni Lozza. The Committee of the Specialising Master's programme comprises professors from Politecnico di Milano: Alfonso Niro, Giovanni Lozza, Emanuela Colombo, Alessandra Beretta, Luigi Colombo; Dr Roberto Cimino, Dr Gennaro Cangiano from Eni S.p.A.; Dr Chiara Sarnataro and Eng. Katia Demetri from Eni Corporate University S.p.A.

ART. 2

Educational objective and employment opportunities

The energy world is changing rapidly, and environmental compatibility imposes a greater need for transversal and multidisciplinary knowledge to be added to the traditional model of skills based on in-depth vertical studies in the Oil & Gas sector (drilling, reservoirs, exploration, etc.). Issues related to environmental protection, energy-saving and mitigation of the greenhouse effect are crucial for the Energy sector. New areas of expertise are opening. These include green chemistry, biomass, bio-refinery, digitalisation, big data and automation, new materials and storage issues, which are crucial in the renewable energy sector. New methods of producing and managing energy and new business models are opening for the energy sector, which must be continually integrated and updated. The sector's capacity for technological innovation will be the distinctive and fundamental lever to create a resilient and flexible Energy Company, capable of entering new frameworks and developing new businesses. The Master's trains professionals who know how to operate in the energy technological innovation field, and can face the challenges described above.

The objective of the specializing Master's degree is to integrate and complement the education of students with basic engineering, physics and chemistry training by teaching content specific to the energy industry. The employment outlets of such a specializing Master's degree reside in a better awareness of issues specific to the energy industry. In light of these objectives, Eni sponsors and shares the management of the Master's program.

The Programme will be delivered in English.

ART. 3 Teaching content and organisation

The Specialising Master's will start in **March 2023** and end in **March 2024**.

The course aims to train professionals who know how to operate in the field of technological innovation in the energy field, with an in-depth knowledge of issues specific to the energy and environmental sector, as well as data processing and innovative materials. The propensity and ability to operate in diverse cultural and social contexts is also considered essential, bringing to bear the personal skills that the Master's program aims to develop through the in-depth study devoted to so-called soft- skills.

Teaching will be organised as follows:

	Course	ECTS	SSD
1	<u>Scenario, Regulations and Project Management</u>		
	Energy scenarios, sustainability and climate change	1,5	ING-IND/10
	Energy economics and regulations	1	ING-IND/35
	Innovation and project management	1,5	ING-IND/35
		4	
2	<u>Soft Skills (1) and Technology Overview</u>		
	Problem solving and decision making	1	ING-IND/35
	Communication skills	1	M-PED/03
	Overview (R&D technology scenario)	0,5	ING-IND/10
	Intellectual property	0,5	ING-IND/10
		3	
3	<u>Fundamentals and experimental tools</u>		
	Fundamentals of Applied Thermodynamics and Heat Transfer	5	ING-IND/10
	Fundamentals of Power Plants	2	ING-IND/09
	Experimental tools	1	ING-IND/10
		8	
4	<u>Oil & Gas Technologies</u>		
	Overview	0,5	ING-IND/30
	Exploration	1	ING-IND/30
	Reservoir / Drilling & Completion	1	ING-IND/30
	Facilities & Development	0,5	ING-IND/30
	Production & Maintenance / Logistics	1	ING-IND/30
	Natural gas technologies (treatment and transportation)	0,5	ING-IND/25
	LNG, Gas Advocacy	0,5	ING-IND/25
	Refinery processes & green refinery	1,5	ING-IND/27
	Innovative products (Fuel-lubricants & Bio-fuel)	0,5	ING-IND/27
	Petrochemical processes & Polymer Science	1	ING-IND/27
	Green Chemistry	0,5	ING-IND/27
		8,5	
5	<u>Soft Skills (2)</u>		
	Team working and diversity	1	ING-IND/35
	Ethics in innovation	1	M-FIL/02
	Creativity and Innovation	0,5	M-FIL/02
		2,5	

6	Renewables and innovative energy systems		
	Potential and perspectives of RES	0,5	ING-IND/09
	Electric grids with large penetration of RES	0,5	ING-IND/33
	Solar: thermal, CSP, PV, frontier technologies	2	ING-IND/09
	Wind, Geothermal, Hydro, Biomass	1	ING-IND/09
	Energy Storage	1,5	ING-IND/10
	Fuel cells, Hydrogen, Hybrid systems	1,5	ING-IND/09
	Nuclear Energy and Nuclear Fusion	1,5	ING-IND/19
	Carbon Capture Utilization and Storage	1,5	ING-IND/09
		10	
	Final thesis elaboration (individual work related to the Masters' characterizing themes)	16	
	Final thesis preparation and defense	8	
	Total	60	

ART. 4 Admission requirements

The master is reserved to candidates selected by ENI S.p.A and its affiliated and controlled companies (hereafter "Eni") therefore all the applications at the Master's will only be those selected and identified by Eni, also through Eni Corporate University.

It shall be Politecnico di Milano responsibility to evaluate the eligibility of the candidates selected by Eni, on the basis on specific requirements such as a Bachelor or Master of Science in Engineering, Physics, Chemistry, Industrial Chemistry. For candidates with a foreign degree, Politecnico will consider equivalent study titles in the issuing countries and educational institutions. Finally, Eni, also through Eni Corporate University will identify the admitted candidates. The maximum number of participants is 10.

ART. 5 Formal requirements

The **admission application** must be submitted starting from the day after the date of this Decree and by **December 20, 2022.**

*** Italian/foreign citizens who graduated in Italy**

- copy of the identity document
- copy of the Diploma Supplement or photocopy of the degree diploma

*** Italian/EU citizens with qualification gained abroad**

- copy of the identity document
- copy of the academic qualification obtained, both in original language and translated;
- copy of transcripts, both in original language and translated or Diploma Supplement (**during enrolment, the certificate of equivalence issued by the relevant area's Italian Representative abroad or certificate issued by the Enic/Naric Centres must be submitted**)

The admission application must state the following "I authorise this University, under EU Regulation no. 2016/679 on data protection, to process personal data only for purposes related to the Master's admission, enrolment and management, and agree to the disclosure of my personal information to third parties, particularly:

- public and private entities interested in possible recruitment;
- to academic programme backers; Politecnico Treasurer for services related to tuition fees;
- to entities managing unsecured loans, housing, flexible employment contracts, cultural, recreational and/or sports activities.
- I authorise the use of the data for statistical purposes in respect of the procedures and authorisations required by the cited regulation.

The extended information on data processing and data subject rights is available on the website www.polimi.it/privacy

* Non-EU citizens who graduated abroad

Non-EU foreign citizens must submit the following to the Managing Authority, at least 30 days before the enrolment closing date, as set out in this article:

- **copy of the degree** in the original language and its translation into Italian/English/French or Spanish
- **copy of the transcripts** with the list of exams in the original language and their translation into Italian/English/French or Spanish **or Diploma Supplement**
- **copy of a valid passport**

Under Art. 75 of Italian Presidential Decree 445/2000, if the administration, after carrying out suitable checks, finds that the content of the declarations made by the applicant is untrue, the declarant forfeits any benefits obtained by the measure issued based on the untrue declaration.

The Managing Authority shall send the documentation listed above for the evaluation of qualifications, to participate in the Politecnico di Milano's Specialising Masters, **Masters and Lifelong Learning Service by the closing date of this call for applications**, under the MIUR/MAE note "Procedures for entry, stay and enrolment of students applying for visas in higher education programmes in Italy for the 2022/23" academic year.

Following acceptance by the University, and only after confirming to the Managing Authority their participation on the Programme by the set methods, students must register on the Ministerial portal <https://www.universitaly.it> informing the Managing Authority that the registration has been completed in order for the application to be sent to the Representative responsible for issuing the entry visa.

ENROLMENT METHOD:

Students admitted to the Master's Programme must create access credentials to Politecnico di Milano's online services on the website www.polimi.it They must then enter their details and create a **person code**, attaching a valid identity document (passport for non-EU citizens), and communicate their person code to the Master's Managing Authority. Students already registered must update their personal details, if they are obsolete.

The achievement of an Italian degree can be self-certified by completing the appropriate form provided by the Politecnico di Milano Energy Department. A degree obtained abroad must be documented by presenting a declaration of value (DOV) issued by the Italian Representative abroad (Italian Embassy or Consulate) on letterhead and completed with its original stamp; or a certificate issued by the Enic/Naric Centres **(in Italy the CIMEA)**. **In order to be enrolled, while awaiting for the DoV or CIMEA Statement of Comparability to be issued, students must provide the receipt of the DoV or CIMEA application.**

Portal access credentials must be retained as they will be required to access all of Politecnico di Milano's services. Lost access credentials may be autonomously restored or obtained through an OTRS ticket.

Politecnico creates a temporary student identification number to allow the student to pay the enrolment fee via online services.

In addition to the above documentation, **non-EU citizens must upload a copy of a valid residence permit on their online services personal data record.**

ART. 6

Degree and award recognitions

ISSUED CERTIFICATION

At the end of the Programme, after passing the final test, the student will be awarded the “Energy Innovation” first-level Specialising Master’s diploma, in English.

Students admitted to the Master's final examination will pay the fee via the online services of Politecnico di Milano in order to be able to take the exam.

STUDENT OBLIGATIONS

Attendance is compulsory for at least 75 per cent of the programme activities. The lectures will be held at Politecnico di Milano, subject to the pandemic situation.

Cancellation from the Programme must be made in writing. The training period may not be suspended for any reason.

TESTING METHODS

The final examination will consist of a thesis defense, developed individually by the students with the supervision of a professor or an expert from Politecnico or Eni, on bibliographic, theoretical or project work topics relevant with the Master’s contents.

ART. 7

Tuition fees and contributions

Eni fully bears the Master’s participation costs for admitted applicants, including the Politecnico di Milano enrolment fee (€500 per student).

ART. 8
Personal data processing

Under EU Regulation no. 2016/679 on data protection, the University processes personal data only for purposes related to the master's admission, enrolment and management, and you agree to the disclosure of your personal information to third parties, particularly:

- public and private entities interested in possible recruitment;
- to academic programme backers; Politecnico Treasurer for services related to tuition fees;
- entities managing unsecured loans, housing, flexible employment contracts, cultural, recreational or sports activities.
- I authorise the use of the data for statistical purposes in respect of the procedures and authorisations required by the cited regulation.

The extended information on data processing and data subject rights is available on the website www.polimi.it/privacy

ART. 9
Publication

This Decree is made public on Politecnico di Milano's website at <https://www.polimi.it/corsi/master-universitari-e-corsi-post-laurea/>

FOR CLARIFICATIONS AND FURTHER INFORMATION, PLEASE CONTACT:

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Rector
(Prof. Ferruccio Resta)
Signed Ferruccio Resta

Digitally signed document, under legislation.