Politecnico di Torino

STEFANO PAOLO CORGNATI
Rettore

Bando di concorso per la selezione delle candidature del Master universitario di II livello in esercizio di Apprendistato di Alta Formazione e di Ricerca in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" a.a. 2025/2026

IL RETTORE

- Visto lo Statuto del Politecnico di Torino emanato con D.R. 774 del 17 luglio 2019;
- vista l'istituzione, nello Statuto del Politecnico di Torino, della Scuola di Master e Formazione Permanente;
- visto il Regolamento della Scuola di Master e Formazione Permanente emanato con D.R. n. 1136 del 6 novembre 2023;
- tenuto conto di quanto previsto all'art. 3 del D.M. 270 del 22 ottobre 2004 e s.m.i.;
- vista l'attivazione da parte del Comitato Esecutivo nella seduta del 16/04/2025 del Master di II livello in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" per l'a.a. 2025/2026;
- visto l'Accordo sottoscritto tra Politecnico di Torino e Eni Corporate University S.p.A. (di seguito, per brevità anche ECU) relativo alla realizzazione del Master sopracitato, riservando alle persone candidate un percorso in apprendistato di alta formazione e di ricerca, di cui all'art. 45 del decreto legislativo n. 81 del 2015;
- tenuto conto della comunicazione inviata da Eni Corporate University (Prot. 37/RU/CS) del 4 aprile 2025 che modifica i requisiti di ammissione al Master sopracitato;
- tenuto conto che Eni S.p.A. (di seguito "Impresa Partner") ha manifestato l'intenzione di assumere fino a un massimo di 15 apprendisti/e in avvio di percorso;
- preso atto della procedura selettiva definita dall'Impresa Partner finalizzata all'assunzione in apprendistato;
- considerato che all'Ateneo compete la verifica amministrativa del rispetto dei requisiti di ammissione al Master previsti all'interno del bando;
- tenuto conto che l'ammissione di eventuali studenti in possesso di titoli di studio diversi da quelli indicati nel bando, e/o con titolo di studio conseguito all'estero, sarà affidata ad un'apposita Commissione che ne valuterà l'idoneità, secondo quanto indicato nel bando;
- considerato che le candidature idonee, saranno successivamente messe a disposizione dell'Impresa Partner per l'espletamento della procedura selettiva ad opera dell'impresa stessa;
- tenuto conto che l'Impresa Partner provvederà direttamente alla selezione delle candidature, riservandosi la possibilità di effettuare colloqui finalizzati all'inserimento in azienda (ex art. 45 D. Lgs 81/2015) esclusivamente alle persone candidate con profili ritenuti

più adatti alle esigenze specifiche di inserimento nel proprio organico, in conformità con le proprie policy di assunzione;

- preso atto che, in seguito alla conclusione del processo di selezione effettuato dall'Impresa Partner, quest'ultima trasmetterà al Politecnico di Torino l'elenco delle persone selezionate, che saranno ammesse a partecipare al Master, oltre all'elenco di eventuali persone idonee al subentro;

DECRETA

l'emanazione del bando per l'ammissione al Master Universitario di II livello in esercizio di Apprendistato di Alta Formazione e di Ricerca in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" offerto presso la sede di Torino per l'a.a. 2025/2026.

Torino

Stefano Paolo Corgnati

Rettore del Politecnico di Torino

CF/AP/sd

f.to: Stefano Paolo Corgnati

Politecnico di Torino

Data: 17/04/2025 08:55:04 CEST

Call for applications for the 2nd level Specializing Master's programme in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" offered in apprenticeship format (Art. 45 – D.Lgs. n. 81/2015) a.a. 2025/2026

Art.1
(Programme overview)

Politecnico di Torino in collaboration with Eni Corporate University S.p.A., as a principal and representative of Eni S.p.A., (hereinafter referred as to "Eni"), has activated, in accordance with D.M.270/2004, for academic year 2025/2026 the second edition of the 2nd level Specializing Master's programmes in "Next-Gen Nuclear Power: Fusion and Advanced Reactors".

This programme is offered in the apprenticeship format (Apprendistato di Alta Formazione e di Ricerca) and it has been designed in close cooperation with the company involved in the educational project, Eni S.p.A. (hereinafter referred as to "Eni").

The purpose of the programme is to support graduates in developing specific competences for design, operation and maintenance of next generation fusion and fission power plants.

In particular, the goal is to integrate their engineering knowledge (e.g. mechanical engineering, automation engineering, energy engineering, etc.), with state of the art know-how on next generation fusion and fission power plants, including innovative design, new reactor components, innovative technologies, materials and fuel cycle, energy conversion system, safety aspects and regulation.

In accordance with the abovementioned apprenticeship format, selected candidates will be hired by Eni and upon completion of the programme they are awarded the 2nd level Specializing Master's diploma.

Eni has undertaken to recruit at maximum 15 apprentices.

The 2nd Level Specializing Master's programme will begin in September 2025 and the apprentices will be hired by Eni at the same time.

More information on the learning objectives, programme contents and possible career opportunities is available on the website of the programme at: https://www.polito.it/en/education/specializing-master-s-programmes-and-lifelong-learning/specializing-master-s-programmes/specializing-master-s-catalogue/next-gen-nuclear-power-fusion-and-advanced-reactors.

The Programmes coordinator is Roberto Zanino, from The Department of ENERGY (DENERG) of Politecnico di Torino (hereinafter referred as to "Programmes Coordinator").

Art. 2

(Training objective, didactic contents and organization of the activities)

This Specializing Master's programme is an experiential learning path which combines educational activities at Politecnico and on-the-job training at the Eni's premises.

The 2nd level specializing Master is a full-time programme of approximately one academic year duration for a total of 70 ECTS; it will start in September 2025 and end in September 2026.

The 2nd Level Specializing Master's programme is organized as follows:

- training activities at Politecnico di Torino (classroom – laboratory – lecture - business case): 500 hours;
- training on the job/Project work: 500 hours, carried out at the employer's premises;
- Self-learning activities: 750 hours

Table n.1 – Organization of the courses

Courses	ECTS	Hours
Principles of thermal fluid dynamics	2	20
Principles of structural mechanics	2	20
Principles of electrical engineering	1	10
Materials for nuclear power applications	3	30
Safety of nuclear plants	3	30
Radiation protection + Fuel cycle and radioactive waste management	4	40
Principles of Nuclear Fusion and basic plasma physics	2	20
Magnetic Confinement and Transport in Fusion Reactors	2	20
Introduction to fusion reactor engineering	2	20
Applied superconductivity	3	30
Superconducting magnets	3	30
Breeding blanket and Balance-of-Plant	2	20
Power exhaust	4	40
Power supply	2	20
H&CD	2	20
Remote handling	3	30
Integration issues in a tokamak	2	20
Principles of fission reactor physics and application to innovative reactor concepts	2	20
Introduction to advanced and Gen-IV reactor designs	2	20
Liquid-metal cooled fast reactor thermal-hydraulics	2	20
Introduction to Small Modular Reactors (SMR)	2	20
Project work	20	500
	70	1000

The official language of the programme is English.

Classes are held in presence at Politecnico di Torino – Campus Lingotto starting in September 2025 and ending in May 2026. The project work will be developed at Eni sites starting from June 2026.
The programme is residential.

Art. 3
(Admission requirements)

The programme is intended for both Italian and foreign citizens who must:

- have earned a Master's degree (or equivalent qualification) by June, 25th 2025;
- to have a Master's degree final grade corresponding to 100/110 (or equivalent);
- to be under the age of 29 on 31/12/2025;
- prove to have a good knowledge of the English language, which Eni will verify under its selection standards.

In order to be admitted to this 2nd Level Specializing Master's Programme, you must hold, by June, 25th 2025, a full degree (Master of Science degree/Laurea specialistica/Laurea magistrale) in one of the following areas (D.M. 270/2004):

Table n. 4

Italian Universities	non-Italian Universities
Master's degree obtained in one of the following degree classes ("*classi di laurea*"): • Physics (LM 17) • Aerospace and Astronautical Engineering (LM 20) • Biomedical Engineering (LM 21) • Chemical Engineering (LM 22) • Automation Engineering (LM 25) • Electrical engineering (LM 28) • Electronic Engineering (LM 29) • Energy and Nuclear Engineering (LM 30) • Computer Engineering (LM 32) • Mechanical Engineering (LM 33) • Material Engineering (LM 53)	Master's degree* (or equivalent or higher academic qualification) obtained in one of the following areas of study with at least 5 years of university education: • Physics • Aerospace and Astronautical Engineering • Biomedical Engineering • Chemical Engineering • Automation Engineering • Electrical Engineering • Electronic Engineering • Energy and Nuclear Engineering • Computer Engineering • Mechanical Engineering • Material Engineering *to be admitted to the Specializing Masters Programme, candidates who have a 4-year Bachelor's degree must also possess a Master's degree obtained within the deadline indicated above.

For foreign applicants, a good knowledge of written and spoken Italian will be considered preferential, possibly supported by certificates of understanding of the Italian language. The level of knowledge will be assessed during the selection process.

Art. 4
(Application deadline and admission process by Politecnico di Torino)

You can apply for admission for this Specializing Master's Programme ONLY through the Application Form available at:
https://www.polito.it/en/education/specializing-master-s-programmes-and-lifelong-learning/specializing-master-s-programmes/specializing-master-s-catalogue/next-gen-nuclear-power-fusion-and-advanced-reactors.
DO NOT apply by e-mail, fax or mail because these applications will not be considered.

Applications are due by:

- **June, 25th 2025** at 2 p.m. - Italian time

You can find the list of mandatory documents that you must attach to your application.
Please note: only documents in English or in Italian will be accepted.

MANDATORY DOCUMENTS
– Valid identification document (passport for extra-EU applicants); – Curriculum Vitae (CV must include the authorization to the processing of personal data – in compliance with the General Data Protection Regulation (EU Regulation 2016/679) and the Personal Data Protection Code, Legislative Decree 30 June 2003 no. 196 and subsequent amendments); – Application form and questionnaire (available on the webpage of the Specializing Master's programme https://didattica.polito.it/master/home/en/request) – list of exams of both Bachelor's and Master's degree programmes (or equivalent): o If your degree(s) was awarded by a non-Italian University or by a private Italian University: official transcript(s) of records, issued by the University of origin, produced on letter-headed paper, containing the full list of all the exams passed, the grades obtained the graduation final grade, final thesis topic and the date of degree conferral. *or* o If your degree(s) was awarded by an Italian Public University: self-certificate (*dichiarazione sostitutiva di certificazione* - Art. 46 DPR 28 December 2000, n. 445) in

which you declare that you earned both a Bachelor's and a Master's degree. Your self-certificate must include: name of degree programme, name of the University, date of degree conferral, full list of all the exams passed and grade obtained, final thesis topic and graduation final grade. In compliance with art. 75 of D.P.R. 445/2000, should your self-certificate be found to be false or incorrect, you will lose any benefit acquired based on your untruthful declaration.
– Residence permit (for extra-EU citizens only) valid for Italy until 30/09/2026.
OPTIONAL DOCUMENTS
– English Language Certificate – Motivation Letter – Official certificates related to other academic careers (i.e. PhD, Master Universitari ecc.) – Certificates related to professional courses – Reference letter

If you fail to attach even one of the above mandatory documents, you will be excluded from the selection process.

Admission process by Politecnico di Torino

The Unit of Specializing Master's Programmes, Lifelong Learning and Challenge will evaluate the eligibility of each application based on the admission requirements provided for in Art. 3 and will publish the list of eligible candidates admitted to Eni selection process (see Art. 5) on the online University Bulletin and on the Selection Outcomes page of the Specializing Master Programmes' website:
https://www.polito.it/en/education/specializing-master-s-programmes-and-lifelong-learning/specializing-master-s-programmes/specializing-master-s-catalogue/next-gen-nuclear-power-fusion-and-advanced-reactors

Only non-Italian university degrees will be assessed by a specific board chaired by the Programmes Coordinator in order to evaluate the foreign qualification based on the abovementioned admission requirements.
All the applications evaluated eligible will be forwarded to Eni for the next phase of the selection process.

The person responsible for the Politecnico di Torino's administrative procedure is Mr. Alberto Pusceddu (Head of the Unit of Specializing Masters Programmes, Lifelong Learning and Challenge).

Art. 5
(Eni Selection process and outcomes)

Eni and its affiliated companies will carry out the selection process in line with their internal procedures and policies (https://www.eni.com/it-IT/carriere/percorsi-formativi/master/next-gen-nuclear-power.html), in order to select the candidates who will take part in the 2nd level specializing Master's Programme in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" and will be hired in Eni through an apprenticeship contract.

Eni, in accordance to its recruitment policy, will contact the applicants who will be assessed through different following selection steps such as an English test, in order to verify language level, a written technical test and an attitudinal and technical oral test.

The selection process will be held approximately by the end of July 2025 and will be carried out online, according to the number of applications received. Indications and instructions on the selection process will be communicated by Eni to applicants by email in the lead-up to the selection process.

During the entire application period Eni can contact the applicants who satisfy both the compulsory requirements (art. 3) and the corporate selection criteria.

Art. 6
(Selection outcomes)

At the end of the selection process carried out by the partner company, Politecnico di Torino will publish, on the online University Bulletin and on the "Selection outcomes" section of the programme website:

- the list of the candidates admitted to the programme;
- the merit-ranking list of applicants on the reserve list, if any.

For further information about monthly wage provided by Eni for each participant, or other details regarding the contract applied by Eni, please refer to the website of the 2nd level Specializing Master's programme at the following link https://www.eni.com/it-IT/carriere/percorsi-formativi/master/next-gen-nuclear-power.html

Art. 7
(Enrolment and documents submission)

Enrolment

If you are admitted, you must enroll at Politecnico before the Programme starts. You will receive an e-mail with useful information for your enrolment.

Documents submission

After completing the enrolment process, admitted students must present the original documents uploaded to their Application Form to the Unit of Specializing Master's Programmes, Lifelong Learning and Challenge before the programme starts (please refer to Art. 4).

If your degree was awarded by a non-Italian University, upon enrolment you must submit the original copy of the *Dichiarazione di Valore*/Statement of validity (related to your degree) issued by the Italian Diplomatic Mission in the country where the qualification was awarded, or *Attestato di Comparabilità*/Statement of Comparability issued by the CIMEA Centre.

If your degree was awarded by a European university, you can submit your Diploma Supplement instead of the *Dichiarazione di Valore*/Statement of validity.

If you do not submit your Statement of validity, you can enrol in the programme with condition, but you must present this document within 6 months of the beginning of the programme. If you do not provide the above-mentioned mandatory document by the deadline, you are placed on hold and cannot progress in your studies until you actually present this document.

If you are a non-EU national, you have to submit a valid residence permit for non-EU citizens residing in Italy (please refer to Art. 4).

Politecnico di Torino reserves itself the right to check the truthfulness of the declarations included in self-certificate sent by the applicants (pursuant to Article 46 of DPR. no. 445 of 28 December 2000) and Politecnico excludes them from the ranking list in the event of false declarations.

Art. 7
(Student assessment and final qualification)

The Specializing Master's Programmes require you full time commitment. You are requested to attend activities for at least 75% of the Programmes.

Absences for more than this limit leads you to exclusion from the Specializing Master's Programmes.

Withdraw from the Programmes must be put in writing.

STUDENT ASSESSMENT

At the end of each course, you have to take an exam consisting in a written test and/or an oral evaluation test.

If you fail the exam, you can arrange a make-up exam directly with the professor responsible for the course. You can take a make-up exam just once.

At the end of the Programme, participants make a final report related to their project work and are assessed for it.

The final grade is assigned by the Graduation Examining Committee who will assess the overall average grade of all the exams on a scale of 110. Exams passed with honours do not have an impact on the Average grade. The Graduation Examining Committee can add up to a maximum of 5 points, taking into consideration the evaluation of the work you have carried out for the project work (dedication, autonomy, methodological rigour, relevance of results, etc.). If you reach the score of 110/110, the Graduation Examining Committee might decide to confer the degree with honours (cum laude). The decision must be taken by qualified majority (at least 2/3 of the Committee members must vote in favour of awarding this distinction).

More details about the exams, final presentation and project work will be presented during the programme.

FINAL QUALIFICATION

Upon completion of the programme, participants who regularly attended the activities and earned all the ECTS required for graduation, are awarded the "Next-Gen Nuclear Power: Fusion and Advanced Reactors" 2nd level Specializing Master's diploma by the Politecnico di Torino. The Diploma will be issued in Italian.

If, at the end of the Specializing Master's Programme, you have not passed all the exams included in your Study Plan you can get a Certificate of Attendance and a Transcript of Records with the list of the exams that you have passed with grades, dates, credits and scientific disciplinary field.

Art. 8
(Participation and enrolment fee)

The participation in the 2nd level Specializing Master's programme is free of charge for the students selected by Eni.

In accordance with the "Tuition Fee Guide" of Politecnico di Torino, admitted students exempted from paying the participation fee, have to pay € 21,00[1] detailed as follow:

1. Premium for accident insurance: € 5,00
2. Enrolment revenue stamp: € 16,00

The issue of the diploma of the 2nd level Specializing Master's Programme in "Next-Gen Nuclear Power: Fusion and Advanced Reactors" requires the payment of a revenue stamp (€ 16,00).

Art. 9
(Competent Unit)

[1] The insurance premium may change due to new rules adopted by Edisu and to the stipulation of an insurance contract

The competent unit is the Unit of Specializing Master's Programmes, Lifelong Learning and Challenge of Politecnico di Torino, Tel. 0110907986 – e-mail: master.universitari@polito.it

Art. 10
(Processing of Personal Data)

Politecnico di Torino and Eni both act as autonomous data controllers and are committed to operating in full compliance with the applicable personal data protection legislation to them in relation to the data processing activities related to the execution of this Call for applications. In particular, students' personal data are processed by Politecnico di Torino exclusively for institutional purposes of education and by Eni as indicated in the privacy notice uploaded on Eni's digital platform for students' applications referred to in the following link [https://www.eni.com/en-IT/careers/informativa-dati-personali.html]. For any information concerning the processing of personal data, students may contact Eni's Data Protection Officer by sending an e-mail to the following address: dpo@eni.com.

The processing of personal data is based on the principles of correctness, lawfulness and relevance of purposes. In order to pursue the "Specializing Master's Programmes in Next-Gen Nuclear Power: Fusion and Advanced Reactors" candidates agree that the Politecnico di Torino shares their personal data with Eni.

In accordance with the General Data Protection Regulation (EU Regulation 2016/679) and the "Code regarding the protection of personal data" (Legislative Decree No. 196 of 30th June 2003 and further amendments) personal data are processed by Politecnico di Torino exclusively for the selection and enrolment process in pursuit of the university aims and in accordance with the transparency purposes imposed by the law. The processing of personal data is based on the principles of correctness, lawfulness and relevance of purposes. More information on the processing of personal data is available at: https://didattica.polito.it/privacy/.

The Data Controller is Politecnico di Torino, represented by the Rector, with statutory seat in Corso Duca degli Abruzzi, 24-10129 Torino.

You can contact the Data Controller at politecnicoditorino@pec.polito.it (certified e-mail).

For further information and inquiries write to privacy@polito.it.

You can contact the Data Protection Officer (DPO) of Politecnico di Torino for inquiries on the processing of your personal data and your rights at: dpo@polito.it; dpo@pec.polito.it (certified email).

For the Politecnico di Torino the privacy policy is available at: https://didattica.polito.it/privacy

Art. 12
(Access to documents)

Access to all documents is allowed in the forms provided by current legislation.

Art. 13
(Final provisions)

1. The Programme will start only if the minimum number of participants is reached.
2. Communication with applicants takes place primarily through the "Apply@Polito" platform.
3. Specific communications might be sent via email or SMS using the contact details provided by applicants during registration on the platform.
4. Politecnico does not take any responsibility in case of unavailability of recipients and for loss of communications due to inexact indication of an applicant's email address or telephone number or due to delay or failure to notify changes to the contacts provided during registration.

The Call for applications is published on the online University Bulletin available at https://www.swas.polito.it/dotnet/albo_online. The same can be found on https://www.polito.it/en/education/specializing-master-s-programmes-and-lifelong-learning/specializing-master-s-programmes/specializing-master-s-catalogue/next-gen-nuclear-power-fusion-and-advanced-reactors