



POLITECNICO
MILANO 1863

School of Industrial and Information Engineering

The training experience offered to the students of the Master's Degree in Nuclear Engineering

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What does a nuclear engineer do?

Nuclear engineers study, design, develop, and manage technologies and systems that exploit nuclear properties and processes for energy production, medicine, scientific research, industry, and the environment. They design nuclear fission reactors and fusion systems, manage the safety of activities involving ionizing radiation, and develop solutions for nuclear fusion. They also work on the development and use of techniques for the diagnosis and treatment of diseases, or on the study and development of innovative materials. They are able to operate particle acceleration machines and devices and participate in the development of nuclear generators for space missions. In addition to industrial applications, they can hold positions in national and international institutional bodies responsible for regulating and overseeing activities in the sector.

What do you study?

The **Degree Program** (*Manifesto degli Studi*), divided by academic years and semesters, is the set of educational activities (courses, laboratories, internships, final examinations), either compulsory or elective, that make up the educational offer of a Study Program (*Corso di Studi*).

The **Study Plan** (*Piano degli Studi*) is the list of educational activities that the student intends to undertake during each academic year. The Study Plan is normally compiled by selecting educational activities from the offer defined in the Degree Program (*Manifesto degli Studi*) of the student's own Study Program. In this case, the Study Plan is automatically approved.

Students may also request to include, for the purpose of obtaining their degree, courses/laboratories offered by Study Programs other than their own. In such cases, the request is subject to approval by a dedicated committee, which assesses its consistency with the educational objectives described in the Academic Regulations (*Regolamento*) of the Study Program.

The **Credito Formativo Universitario - CFU** (**University Educational Credit - ECTS**) is the unit of measurement of the workload required in terms of learning activities. One credit conventionally corresponds to 25 hours of work, including both self-study/individual work and assisted teaching activities, meaning all educational activities in which the student interacts with the instructor (lectures, group exercises, laboratory activities, etc.).



Nuclear engineers are distinguished by their remarkable versatility and multidisciplinary approach. This is because, in the diverse contexts in which they operate, they are required to harmoniously combine advanced skills in mathematics, physics, and chemistry, effectively applying them to a wide range of engineering fields.

The degree program is designed and structured specifically to guide students, step by step, toward this integration of high-level scientific and technological knowledge.

First year

This initial period of study is designed to help you consolidate the foundations, introduce advanced topics common to all areas of nuclear engineering, and begin to outline your own career path through more specific courses.

You'll find a group of courses (for a total of 20 credits) that provide solid grounding in key topics for a nuclear engineer: from quantum and nuclear physics, to mathematical methods, to applied thermodynamics, structural mechanics, nuclear power plants, and radiation protection. The aim is to expand and reinforce what you've learned during your BSc degree program, thus creating a solid foundation for all students.

In addition to these, there are some compulsory courses that introduce tools and methodologies useful for measuring and analysing radiation fields (*Radiation Detection and Measurements*, 10 CFU)—a skill required in many sectors of research and industry—and which offer an initial understanding of the physical and engineering phenomena that regulate the functioning of nuclear fission reactors (*Fission Reactor Physics I*, 10 CFU), central topics for those who intend to work in this sector and, more generally, for anyone working in the field of industrial engineering.

Finally, you'll have the opportunity to customize your study plan: a selection of elective courses (from a guided list, for a total of 20 credits) will allow you to begin exploring one or more of the three areas of study that will be explored in depth in the second year. This is an opportunity to develop your skills and focus on the path that best suits your interests, including nuclear plant engineering, measurement, medical, industrial, or environmental skills, and the physics of complex systems, including those outside the context of nuclear fission.

Second year

Get to the heart of your nuclear specialization with three possible tracks:

- Nuclear Plants;
- Nuclear Technologies;
- Nuclear System Physics.

At this point, the path becomes truly personalized. Thanks to a wide range of elective courses, you can build the study plan best suited to your interests, selecting 20 credits from short lists,



differentiated for each major, and another 15 credits from very broad lists that also include courses offered by other universities. This gives you the real opportunity to delve deeper into the areas most closely aligned with your interests and professional goals, within a curriculum that combines cutting-edge scientific and engineering training with solid, immediately transferable knowledge.

This broad flexibility is accompanied by the presence in all study plans of a mandatory course (*Nuclear Design and Technology*, 10 CFU) aimed at developing advanced industrial engineering skills, of a transversal nature and of proven usefulness in a wide range of application contexts. Finally, you will have the opportunity to apply the knowledge acquired in the final project (15 CFU).

Don't forget that you can always consult the entire degree program and academic educational rules on the following web page: [Nuclear Engineering - Nuclear Engineering - Polimi](#).

Interdisciplinary Programs

▪ PoliMI Ambassador

The PoliMI Ambassador programs are four advanced university-level training paths designed to create new professional profiles in Green Technologies, Smart Infrastructures, Inclusivity Design, and Creative Thinking. The objective is to foster the acquisition of:

- skills in specific areas consistent with the selected educational path;
- enabling digital technologies relevant to the profile;
- interdisciplinary tools and methods, and a systemic vision mindset;
- the ability to work in interdisciplinary and multi-sectoral contexts, developed through exposure—also in team settings—to case studies and challenges.

For a detailed description of the objectives of each PoliMI Ambassador program, please refer to the [PoliMI Ambassador](#) webpage.

Each educational path is developed throughout the *Laurea Magistrale* (equivalent to Master of Science) and defines, within 130 *Crediti Formativi Universitari* (University Educational Credits – ECTS), of which at least 10 must be extra credits, the minimum number of credits required to obtain the selected *Laurea Magistrale* degree and, at the same time, to receive the PoliMI Ambassador certification in the selected field.

The student must acquire at least 30 *CFU* (ECTS) in educational activities relevant to the chosen PoliMI Ambassador profile, selected from two course tables listed in the *Regolamento Didattico del Corso di Studi* (Study Program Educational Rules) of their program. In particular,



the student must obtain at least 10 CFU from the first table (Table A) and 20 CFU from the second (Table B), in accordance with the procedures described in the Study Program **Educational Rules**.

The "PoliMI Ambassador" certification will be included in the Diploma Supplement and will be officially recognized through the issuance of a specific digital badge.

Failure to earn the 10 extra *CFU* (ECTS) and the minimum 30 *CFU* (ECTS) in activities related to the Ambassador profile does not preclude the student from obtaining the *Laurea Magistrale* (Master of Science) degree.

Higher education courses

The Politecnico di Milano offers MSc students the opportunity to participate in a series of advanced training programs designed to complement and enrich their academic career. These programs, aimed at the most motivated and talented students, aim to develop advanced and interdisciplinary skills, offering a unique and distinctive education. Among the available options, the nuclear engineering program can support you in the following programs: Honors Program, Alta Scuola Politecnica, and Polimi Ambassador in Green Technologies.

The Honours Program in "Scientific Research in Industrial Engineering – Nuclear Science and Technology" is designed for those with a strong inclination toward study and scientific research. It is a program that runs parallel to the master's degree program and allows students to delve deeper into the methodological and technical aspects of nuclear engineering. The program includes an additional 20 credits (ECTS), consisting of the course *Experimental Nuclear Reactor Kinetics* (5 ECTS), elective courses (10 ECTS), and the extension of the master's thesis (5 ECTS). If this program is of interest to you, please consult the [official website of the Honours Programme](#).

The Alta Scuola Politecnica (ASP) is a joint program between the Politecnico di Milano and the Politecnico di Torino, aimed at talented students enrolled in MSc study programs. The ASP's goal is to train professionals capable of tackling complex and multidisciplinary problems, combining advanced technical skills with an innovative and entrepreneurial mindset. The program offers 30 additional credits beyond the 120 credits of the master's degree, divided between courses dedicated to soft skills and transversal skills, and a multidisciplinary research project developed in groups of students with diverse backgrounds. Consult the [official website of the Alta Scuola Politecnica](#) for more information.

To access these higher education programs, students must generally meet specific criteria, such as a good academic grade and proficiency in English. Selection is often based on the evaluation of a CV, a cover letter, and, in some cases, individual interviews. Each program



requires application through the Politecnico Online Services, by the deadlines set forth in the respective calls for applications.

For further details regarding any incompatibilities and specific admission requirements, please refer to the regulations of each program.

What are the teaching methods?

Teaching and learning models

The educational model of the Politecnico di Milano includes five types of assisted teaching:

- Transmissive / Lecture-Based Teaching (Didattica trasmissiva/frontale - DT): the student listens to the delivery of content that will then be consolidated independently;
- Interactive / Participatory Teaching (Didattica interattiva/partecipativa - DI): the student, under guidance, is involved individually or in groups in carrying out or participating in an activity proposed by the instructor, also through the use of suitable digital tools;
- Laboratory-Based Teaching (Didattica laboratoriale - DL): the student is involved, individually or in groups, in a practical experience aimed at applying the concepts and methodologies presented by the instructor, typically with the aid of appropriate tools and equipment in computer or experimental laboratories;
- Project-Based Teaching (Didattica progettuale - DP): the student is involved, individually or in groups, in the development of a complex project or product, which is gradually enriched as awareness and the ability to use theoretical, technical, and metacognitive tools are acquired;
- Evaluation-Based Teaching (Didattica valutativa - DV): the student is directly involved in an evaluation or self-evaluation activity followed by appropriate feedback (quantitative or qualitative, and either named or anonymous).

The study program offers a diverse curriculum, designed to provide you with a solid and comprehensive education that develops a wide range of skills. Depending on your choices in the MSc study plan, you will be exposed to different learning methods (see the table above). Further details are available in the individual course descriptions.

The current degree program includes mandatory laboratory, computer science, and design activities. Specifically, these include: *Radiation Detection and Measurement* (30 experimental hours of DL), *Fission Reactor Physics 1* (35 computational hours of DL), and *Nuclear Design and Technologies* (30 DP hours).

Several other elective courses include laboratory activities, where you can also test the knowledge acquired during the lessons through measurement and data analysis activities, subsequently presented in an interactive/participatory teaching format.

Specific training activities are also planned to acquire advanced IT skills, aimed at using software and application codes. For example:

- Monte Carlo codes for nuclear system modeling and radiation exposure monitoring. Courses: *Experimental Nuclear Reactor Kinetics, Reliability, Safety, and Risk Analysis A+B, Fission Reactor Physics 2, Laboratory of Radiotherapy Techniques.*
- Computational fluid dynamics (CFD) software for nuclear engineering. Course: *CFD for Nuclear Engineering.*
- Software for the analysis and transport of radioactive contaminants in soil and groundwater. Course: *Transport of Radioactive Contaminants.*
- Software for simulating complex dynamic systems based on the open source Modelica language (applied to renewable and nuclear energy systems). Course: *Integration of Nuclear and Renewable Energy for Carbon Neutral Scenarios.*
- Using programming languages (Python, Matlab) to simulate complex systems using AI. Course: *Artificial Intelligence and Advanced Simulation for the Safety, Reliability, and Maintenance of Energy Systems.*

In the table below, you can find, as an example, some of the courses included in the study plan of the Degree Programme which, in their teaching mix for the 2024/25 academic year, included methods other than lecture-based teaching.

		DI (hours)	DL (hours)	DP (hours)
Advanced Detection Systems for Nuclear Technologies I + II		5	28	-
Applied Radiochemistry A+B		10	55	-
Transport of Radioactive Contaminants		-	23	-
Advanced Radiation Protection		10	10	-
Medical Application of Radiation Fields		-	28	-

Laboratory of Radiotherapy Techniques		-	24	12
Nuclear Physics Laboratory		-	20	10
Experimental Nuclear Reactor Kinetics		-	26	3
Laboratory of Plasma Physics		6	14	12
Introduction to Nuclear Engineering A+B		10	-	30
Integration of Nuclear and Renewable Energy for Carbon Neutral Scenarios		-	11	20
Artificial Intelligence and Advanced Simulation for the Safety, Reliability and Maintenance of Energy Systems		4	21	12
CFD for Nuclear Engineering		-	33	6
Plasma physics		15	-	-
Particle Physics Laboratory		10	-	-

You can also participate in activities that go beyond classroom or laboratory learning. Each year, as part of certain courses (listed in brackets), you have the opportunity to participate in field trips, such as:

- Visit to external research and development centers: JRC (*Internal Dosimetry, Transport of Radioactive Contaminants*), CNAO (*Medical Application of Radiation Fields*), Jožef Stefan Institute (*Experimental Nuclear Reactor Kinetics*), Enea and INFN Frascati (*Plasma Physics I+II and Laboratory of plasma Physics*), ESRF (*Magnetism and Superconductivity*).
- Laboratories at other universities: LENA Pavia (*Experimental Nuclear Reactor Kinetics*), ISTP-CNR Bicocca and University of Milan (*Laboratory of Plasma Physics*).
- Visits to nuclear power plants and/or companies in the nuclear and related sectors (*Introduction to Nuclear Engineering A+B, Advanced Radiation Protection, Laboratory of Plasma Physics*).



What are the assessment methods?

Assessment methods and exam sessions

The assessment methods are described in the course syllabus (scheda dell'insegnamento) and are made available at the beginning of each academic year. By including a course in their Study Plan, students acknowledge and accept the related assessment methods.

Student performance is assessed through exam sessions held during the dedicated periods specified in the Academic Calendar (*Calendario Accademico*), and may also be evaluated through ongoing assessments (*valutazioni in itinere*) conducted during the semester in which the course is delivered.

For each academic year, there are five exam sessions scheduled for all courses. Specifically, two exam sessions take place at the end of the semester in which the course is taught, two at the end of the other semester, and one in September.

Ongoing assessment

Ongoing assessment may take place through various methods, such as written and/or oral and/or laboratory tests, projects, reports, assignments, and other types of activities assigned by the instructor, carried out either in class or independently, also through the use of digital and online tools.

Ongoing assessment based on two partial exams. For courses that include an ongoing assessment based on two partial exams, the tests are generally held during the breaks in teaching activities specifically scheduled in the Academic Calendar. The date of the second exam coincides with that of the first exam session in the session immediately following the teaching semester. On that date, the student may take either the second partial exam or the regular *exam session*.

Other forms of ongoing assessment. Forms of ongoing assessment other than those described above may take place at any time during the teaching semester. For courses that include them, some assessed activities, clearly indicated in the course syllabus, may be mandatory or required in order to receive a full evaluation. Failure to participate in such activities may result in restrictions during the exam sessions, either in terms of grading or in the ability to take the exams.

Registration for exam sessions

To take part in an exam session, students must register via the Online Services within the specified deadlines. Exam registration is permitted only if the student is up to date with tuition fee payments and the course is included in his/her Study Plan. If the regular registration deadline is missed, it is still possible to register until 11:59 PM on the day of the exam, subject to approval by the professor. Students who decide not to take the exam must cancel their



registration no later than the day before the exam, except in cases of unforeseeable last-minute impediments.

Throughout your study, you can explore different assessment methods, some based on written tests, others involving greater interaction with the instructor, typically combining the assessment of theoretical knowledge with discussion of that knowledge in an applied context. Project-based assessments are also available, introduced from the first year onwards, and are mandatory for some courses. Specifically, the courses offered throughout the semesters assess your learning through different exam formats: written, mandatory or optional oral, mandatory or optional project work, and in some cases, require the use of software during the written exam or project development.

For example, in the last academic year 2024-25 the main exam methods adopted by the Nuclear Engineering course in the various courses were:

- **Written and Oral Exams:**

Some courses require either a written or oral exam only, others both. In many cases, you can choose to take the oral exam to supplement or improve the written exam. *For example: Fission Reactor Physics I* requires passing two written tests and the optional possibility of also taking an oral exam.

- **Individual presentation-based exam.**

In courses that include interactive teaching hours, you may also be assessed through the preparation and presentation of a paper or slides on a topic of your choice, to be discussed in the exam. *For example: Multiphase Systems and Technologies* requires the submission of a paper as part of the assessment, but this is still optional.

- **Project-based exam.**

In several courses, you'll be asked to develop a project, sometimes with the help of specific software. Projects can be individual or group projects, and in some courses, they're mandatory. *For example, Nuclear Design and Technologies* evaluates you based on a technical project developed during the semester.

- **Exam with an experimental component.**

Some courses include laboratory activities whose discussion may be included in the exam, typically during the oral exam or through a technical report. *For example, Radiation Detection and Measurements* includes laboratory activities that are discussed during the oral exam to assess your ability to manage the content and results.

The evaluation system is therefore complex and varied. The overall objective is clear: to encourage active, applied, and critical learning, in line with the development of skills required throughout the course.

What does the final exam consist of?

On the website of the School of Industrial and Information Engineering, under the section [Bachelor's and Master's Degree Exams](#), the following resources are available:

- The regulations for Bachelor's and Master's degree exams, along with the *Regolamenti Integrativi* (supplementary regulations) for each *Corso di Studio* (Study Program);
- Information on how the examination sessions are conducted, key deadlines, and the procedures for submitting the thesis;
- Thesis templates: formats for traditional and article-style theses, as well as the executive summary template, which must be submitted together with the thesis in case a *Controrelatore* (Examiner) is required.

The final thesis represents, first and foremost, an opportunity to delve deeper into a cutting-edge topic in nuclear engineering. Furthermore, its development provides an important opportunity for critical evaluation and consolidation of the skills developed throughout the entire university career. Before continuing, please carefully review the green box above.

The master's thesis consists of developing a research project, often in collaboration with academic groups or cutting-edge industrial companies, which will allow you to independently apply scientific and engineering methods and tools to a complex problem. As discussed below, each thesis requires the supervision of a supervisor, who must be a professor or researcher at Politecnico di Milano. Upon completion, you will write a final dissertation and then present and defend your thesis on the day of the MSc graduation exam before a committee of Politecnico faculty.

The overall quality of your work will be assigned a score, which will be added to the weighted average out of 110 to determine the final master's degree grade, up to a maximum of 4 points. This can increase to 7 if the thesis presents adequate elements of originality and overall commitment, and requires evaluation by an examiner. At your supervisor's discretion, the work may also be evaluated by a third party—the examiner, generally an expert in the field—whose assessment contributes to the final grade, along with that of the supervisor and the graduation

committee. In this case, you will also be required to prepare an additional document: the *executive summary*.

Finally, particularly commendable theses may receive a *rating of excellence*, which allows for the assignment of up to a maximum of 8 points overall.

Whichever master's thesis plan you choose, it's very important to clarify your goals, expected timelines, and expectations with your supervisor right from the start, so you can agree on a thesis project with a suitable commitment and workload.

Choose your topic carefully, as it can shape your academic and professional future. Spend time speaking directly with professors in class or during office hours, attending seminars and conferences to understand current research lines, and consulting the Career Services for any offers from companies or external organizations. In any case, you will need to identify a supervisor—a professor or researcher at the Politecnico—before starting your research. When contacting them, clearly communicate your areas of interest, the timeframe in which you plan to graduate, your preference for an academic, industrial, or international thesis, your interest in a thesis with or without an examiner, and a brief profile of your skills.

If you choose to complete your thesis in a company, check with the Career Service—in the [Internships and Traineeships section](#)—to find out how to activate the agreement and the training project, so that your experience is recognized. For a thesis abroad, learn about international mobility agreements and related deadlines by visiting the [International Mobility – Erasmus+ and other opportunities page](#). [Remember that scholarships that cover part of your travel and accommodation expenses are also available. Details \(calls for applications and application procedures\) are available on the Scholarships for Thesis Abroad page](#).

You'll find more information about study abroad and corporate internships in the following sections of this document, but the starting point remains a good research idea, a motivated supervisor, and a well-defined work plan: with these elements, your thesis will become your first real test in the field as a nuclear engineer.

Can I get help with my studies?

Tutoring

In order to guide and support students throughout their studies, particularly during the first three years, the School of Industrial and Information Engineering offers various tutoring opportunities, with the aim of providing each student with the most suitable support for their needs. The approach includes peer-to-peer tutoring services, activated on demand based on



student requests, as well as more traditional tutoring services offered on fixed dates and times.

- **Learn how to Learn (Information and guidance tutoring)**

Targeted at first-year students who scored below 60 on the TOL, this is an optional program consisting of three thematic webinars designed to help students immediately identify effective strategies for managing typical university situations, such as attending lectures, studying independently, managing study time, and handling distractions.

To complement the live component, asynchronous activities are provided to deepen the topics addressed during the webinars.

The program is delivered in September (over the course of one week), before the start of classes. Interested students receive a notification email inviting them to participate.

- **Peer to Peer Tutoring**

In this form of tutoring, experienced student tutors provide support, either individually or in small groups of 3–4 students, on the core courses taught during the first two years of all *Corsi di Laurea Triennale* (Bachelor's Laurea Programs). Students may request tutoring for up to two courses per semester.

Those who wish to request a tutor must apply through the “Peer-to-Peer Tutoring” platform available on their Online Services.

For further information, please contact: tutorato-ingegneria@polimi.it.

- **Tutoring for first-year students**

For many of the first-year courses of the *Bachelor's degree program*, tutoring sessions are available and led by PhD students or experienced instructors.

The calendars are available on the School's website at the page: [Calendario Tutorato Matricole](#) (*First-Year Tutoring Calendar*).

- **Specific tutoring activities**

The School also promotes specific tutoring initiatives:

Equalization peer-to-peer tutoring: this service is intended for students coming from Bachelor's degrees not strictly aligned with the chosen *Master's degree program*, or for international students. More experienced student tutors provide support, either individually or in small groups of 3–4 students, on courses within the Master's *Study Programs*.

Tutoring in support of specific courses: tutoring sessions held by PhD students and experienced instructors on selected courses from various study programs, also based on student feedback.

The schedule for these activities is available on the website at: [Calendario tutorato specifico](#) (*Specific Tutoring Calendar*).

Polimi Open Knowledge (POK)



POK (Polimi Open Knowledge) is the first Italian university MOOC (Massive Open Online Courses) platform, offering free online courses open to everyone. The main objective of the platform is to support students, not only from Politecnico di Milano, throughout their university and professional journey: from high school to university, from the *Bachelor's degree* to the *Master's degree*, and from university to the job market.

In addition, many other courses are available for teachers, researchers, professionals, and the general public.

First-year students who wish to strengthen their foundational knowledge in mathematics and physics are encouraged to follow the modules: [Introduzione alla matematica per l'università: Pre-Calculus](#), [Introduction to Experimental Physics: Electromagnetism, Optics, Modern Physics](#).

The study program provides you with a series of tools designed to support you throughout your journey. Particularly in the case of nuclear engineering, students come from a wide variety of backgrounds. Therefore, it's important to be able to count on solid support that can adapt to your needs. In this regard, you have the opportunity to take advantage of various forms of tutoring, especially those offered in courses that help you consolidate the basic knowledge required of a nuclear engineer.

You can find a list of all tutoring programs offered by the School of Industrial and Information Engineering, divided by semester, at the following link:

<https://www.ingindinf.polimi.it/studenti/tutorato/tutorato-specifico>.

For the Nuclear Engineering course, the courses that offer this service are: *Multiphase Systems and Technologies*, *Laboratory of Plasma Physics*, *Introduction to Nuclear Engineering A + B*, *Nuclear Physics / Matter Physics / Plasma Physics I + II*.

Furthermore, you can take advantage of a MOOC course designed specifically for the Nuclear Engineering degree program: "*Introduction to Nuclear*", which you can find at the following link:

<https://www.pok.polimi.it/course/view.php?id=112#courseTabContent>.

Tutoring topics may change based on the needs of those participating: if a large number of students request it, tutoring for new courses can also be activated by contacting the coordinator or the tutoring contact for the Study Program.



Are there any extracurricular activities?

Passion in Action

"**Passion in Action**" is the catalogue of open-participation educational activities offered by Politecnico di Milano to its students, aimed at fostering the development of transversal skills, soft and social skills, and at encouraging/facilitating a personalized enrichment of each student's personal, cultural, and professional background.

Those who are interested can take advantage of this opportunity and choose which activities to attend, exploring different subjects according to their interests and personal inclinations.

Students who participate in *Passion in Action* may register for any activity in the catalogue, regardless of its thematic relevance to their *study plan*, provided that any specific prerequisites for individual activities are met.

The skills and competencies acquired are recognized through the awarding of a digital badge and will be reported in the *Diploma Supplement*.

The catalogue is updated regularly. Since the educational modules are activated asynchronously with respect to the semesters, interested students are advised to check the [Passion in Action](#) page periodically.

It's crucial to remember that the nuclear engineering program is not only an opportunity for professional growth, but also for personal and cultural development. For this reason, the study program is committed to proposing and organizing training, networking, and discussion initiatives that go beyond traditional (curricular) teaching. For example, in recent years, the *Nuc@Polimi program, "Past, Present, and Future," has been launched*. This series of meetings is dedicated to understanding the nuclear world and the role of nuclear disciplines in the fields of culture, research, industry, dissemination, institutions, and geopolitics.

All activities are always promoted through the WeBeep channel and the program's LinkedIn profile. So, pay close attention to communications and seriously consider participating in events that always generate interest and satisfaction.

It's important to emphasize that you too can play a leading role in this and propose, through student representatives, ideas and initiatives of interest.



Student Associations

Student associations are organizations formed by students with the aim of promoting cultural, technical, social, and recreational activities, and creating opportunities for personal and professional growth within the academic environment.

Participating in a student association allows for greater engagement in university life, making the academic experience more dynamic and stimulating. It also fosters the development of transversal skills such as leadership and teamwork, as well as the expansion of one's network, valuable both during university and in professional life.

At Politecnico di Milano, several student associations are active, each with different goals and areas of interest. The full list is available at: [Student Associations](#).

Can I go and study abroad for a period?

Students who wish to take part in an exchange experience must apply through one of the two international mobility calls, which are published in November and April. The University's Mobility Call covers various types of international experiences: simple exchange (1 or 2 semesters) in EU and non-EU countries, Double Degree programs, and Special Programs for students enrolled in specific Study Programs (e.g. Alliance4Tech).

Due to procedural timelines, interested students must apply the year before the planned mobility period.

The choice of possible exchange destinations must be made at the same time as submitting the application to the mobility call. Students are therefore encouraged to gather all the necessary information about each selected destination, out of respect for all applicants.

In fact, declining an assigned destination due to inadequate research into the educational offer results in a lost opportunity, not only for the student who withdraws, but also for other students who could have taken advantage of that placement.

Once they have applied to the call, candidates must carefully follow the deadlines, monitor the rankings, and confirm or decline their interest in the assigned destination, if any. Dates vary for each call, but this phase of the process generally takes place between January and March for the first call, and between May and July for the second call.

Only after the candidate has confirmed the assigned destination, the International Mobility Unit will proceed with the official nomination of each student to the selected host institution. Delays in confirming the destination will result in exclusion from the exchange program.

To view the list of available destinations, students can refer to:



- the section of the Polimi website dedicated to the mapping of all partner universities. By filtering by School and Study Program, students can access useful information about each destination;
- the Exchange your Mind section of the Polimi website, which collects testimonials, useful information, presentations, and in-depth materials on the topic.

An international experience is valuable in its entirety, it allows students to discover new countries, cultures, people, and languages. These aspects should be taken into account when choosing a destination.

At the same time, it is important to remember that it is not always possible to obtain one of the top-listed choices; therefore, each option included in the list of preferred destinations should be selected carefully and thoughtfully.

Students who independently organize their period of study abroad are referred to as "**Free Movers**." This type of mobility is not part of any structured exchange program organized by Politecnico di Milano, such as Erasmus.

Since it is not a structured and formal program, *Free Mover* candidates must take care of all aspects of their stay abroad on their own (contact with the host university, meals, accommodation, health insurance, etc.), and no financial support is provided for expenses related to the mobility period.

The activities eligible for recognition within a *Free Mover* experience include course attendance or thesis work, with different requirements applying to the application and approval process by the Study Program/thesis supervisor.

The application for a *Free Mover* mobility may be approved by the student's *Corso di Studi* (Study Program) only if certain criteria are met. These include an evaluation of the student's CV and an assessment of the reputation of the host institution where the mobility is intended to take place. The specific criteria are detailed below:

- The host institution for the mobility cannot be one for which there are existing exchange agreements with Politecnico di Milano for the School to which the student is enrolled;
- The host institution must be recognized as a quality institution within the student's Study Program, and applicants must describe and demonstrate the validity of the proposed institution (a high ranking position in international university rankings can be one criterion, although not the only one);
- The *Free Mover* candidate must have a specific weighted average exam grade of at least 24 out of 30.

Students enrolled in a Degree Program who have already earned at least 60 University Educational Credits (ECTS) in their academic record may apply for a *Free Mover* mobility.

Similarly to the institutional mobility organized by Politecnico di Milano, *Free Mover* mobility is not permitted during the first semester of the Master's degree. However, students may submit their application during their first semester for mobility periods in subsequent semesters.



The Study Program in Nuclear Engineering offers various types of international experiences, such as, for example, a simple one-semester exchange in EU and non-EU countries (Erasmus experience) and International Double Degrees (EU and non-EU) at prestigious and qualified international universities, within joint programs and/or agreements stipulated with numerous partner institutions.

The most requested experiences to date have involved the following European institutions: Chalmers Tekniska Högskola (Sweden), Institut Polytechnique de Grenoble (France), Universidade Nova de Lisboa (Portugal), Lappeenranta University of Technology (Finland), Norges Teknisk-Naturvitenskapelige Universitet (Norway), École Polytechnique Fédérale de Lausanne (Switzerland), Commissariat à l'énergie atomique et aux énergies alternatives (France) and KTH Royal Institute of Technology (Sweden). As regards the non-EU context, the most numerous exchanges concern Xi'an Jiaotong University (China) and the Korea Advanced Institute of Science and Technology (South Korea).

In addition to those just mentioned, this program has signed exchange agreements with many other institutions. The complete list can be found at <https://www.polimi.it/campus-e-servizi/mobilita-internazionale/studiare-allestero/le-opportunita/agreements>. For each institution, you can consult the description of the host institution, the type of exchange, and, for Double Degree programs, the structure of the mobility program in terms of the number of credits to be taken at Politecnico di Milano and at the host institution, depending on the terms of the agreement signed between the two parties.

Before applying, please carefully review the information for students wishing to study abroad (School of Industrial and Information Engineering), available at the following link: <https://www.ingindinf.polimi.it/it/studenti/opportunita/esperienze-allestero>

The Nuclear Engineering International Mobility Committee can be contacted via the functional mailbox mobility-nucleareng@polimi.it

If you are interested in an international exchange program, it is important to be able to prepare a list of courses you intend to take at the host university, accompanied by a proposal for validation at the Politecnico di Milano. You will need to carefully verify that the study plan complies with ministerial requirements, particularly regarding the scientific-disciplinary sectors of the selected courses.



Can I do an internship?

The stage, also referred to as internship (*tirocinio*), is an educational experience in the professional world, allowing students to put into practice the skills acquired during their academic path, and to guide them toward making informed future career choices.

It can take place either in Italy or abroad, in companies, professional firms, foreign universities, or public and private research institutions.

The stage is considered as **curricular** when it is aimed at students. Specifically, it can be:

- *curriculare obbligatorio* (compulsory curricular), linked to the acquisition of University Educational Credits (ECTS) and included in the Study Plan;
- *curriculare opzionale* (elective curricular), linked to the acquisition of University Educational Credits (ECTS) and included in the Study Plan at the student's discretion;
- *curriculare facoltativo* (curricular but voluntary), not involving the acquisition of ECTS and not included in the Study Plan, with a maximum duration of 12 months, to be completed before the thesis defense.

The extracurricular stage is instead intended for recent graduates who are not enrolled in any other university Study Program, and may last up to a maximum of 6 months.

More information: *Stage per laureati* ([Internships for graduates](#)).

Students interested in a curricular stage, whether *obbligatorio*, *opzionale* or *facoltativo*, can visit the [Stage curricolari](#) (Curricular Internships) webpage for more information about:

- how to find internship opportunities (which is the responsibility of the student);
- the documents that the host organization must request from Politecnico di Milano (*Convenzione di Tirocinio* - Internship Agreement and *Progetto Formativo* - SAT - Internship Academic Structure).

Internship and Master's Degree Thesis

The optional curricular internship and the *Laurea Magistrale* (Master of Science) thesis are two separate activities. The first is optional and does not allow for the acquisition of University Educational Credits (ECTS), while the second is mandatory and involves the acquisition of credits.

It is not excluded that the activity carried out during an optional curricular internship could lead to a Master's Degree thesis. However, for this to be possible, the research activity at an external organization must be carried out under the supervision of an academic advisor from Politecnico di Milano, who must agree from the beginning of the internship on the research objectives and methodologies, and must supervise the activities throughout their execution. It is the student's responsibility to contact an academic advisor before the internship begins.



The nuclear engineering study program generally does not require a mandatory internship or apprenticeship. However, you are free to find and propose internships that best suit your interests, both in terms of type and placement.

In fact, the experience required in almost all cases is a curricular but voluntary internship carried out as part of the thesis work.

For all internships, it's generally important to contact the career services department to properly set up and manage collaboration with the external organization involved.

How can I express my opinion?

Students' opinions are important, and Politecnico di Milano provides several tools through which students can express their views.

OPIS Questionnaire

The *OPIS questionnaire* is the official tool used to collect students' opinions on teaching. The questionnaires are anonymous and results are processed in aggregate form.

The outcomes of these questionnaires are essential for instructors and *the* Study Programs Councils, as they offer insight into students' thoughtful and honest feedback, helping to improve both the educational offer and teaching methods. Once a year, every Study Program Council is required to reflect on its educational path, starting also from the results of these questionnaires. Student Representatives are involved in this process, collaborating in the definition of possible improvement actions.

For this reason, it is important that students express their opinions responsibly, in the interest of the entire academic community of students and faculty.

Students are asked to give their opinion on every course they attended during the semester, by answering a questionnaire that gives students the opportunity to directly contribute to the improvement of the quality of education. For each course, the questionnaire becomes available approximately two-thirds into each semester, and its completion is mandatory before registering for exam sessions for the first time.

Graduating Students' Questionnaire

During the final year of the Study Program, students are also required to give their opinion on the entire educational path. Completing the questionnaire is mandatory in order to register for the Bachelor's/Master's Degree graduation session (Graduating Students' Questionnaire). In this



survey, students are asked to provide feedback on several aspects, including the organization of teaching, specific course content, facilities, internships, international mobility opportunities, and the final examination.

Student Services Satisfaction Questionnaire

This questionnaire is mandatory for registration to the first exam session of the academic year and is intended only for regular students in the final year of their Study Program. The questions concern the services offered to students, including, for example: enrolment procedures, Study Plan submission, exam registration, tuition fees, student offices, ICT, libraries, dining services, and communication.

How can I contribute?

Role of Student Representatives

Student representatives play a key role in ensuring the proper and transparent functioning of the University's governing bodies, where they participate to bring the students' perspective. They are elected every two years and serve not only as points of reference for students in various aspects of university life, but also contribute concrete proposals to improve the student experience.

The **Senato Accademico** (*Academic Senate*) is the body responsible for guiding and planning the University's development, with particular focus on teaching and research, and oversees the overall proper functioning of the institution. The Consiglio di amministrazione (Board of Directors), on the other hand, defines the long-term financial planning based on the proposals and opinions of the Senate. Therefore, the student representatives in these bodies are involved in decisions that affect the entire University.

The Joint Student-Professor Committees (Commissione paritetica) of each of the four Schools (3I – Industrial and Information Engineering; ICAT – Civil, Environmental and Territorial Engineering; AUIC – Architecture, Urban Planning and Construction Engineering; Design) monitor the educational offer, the quality of teaching and student services, and make proposals to enhance them. Depending on the School, some or all of the representatives on the Joint Student-Professor Committee also sit on the School Council, which coordinates the study programs and provides general guidance to the School.

The members of the Academic Senate, the Board of Directors, and the Joint Student-Professor Committees form the **Student Council**, a body where discussions take place on topics addressed within the various governing bodies. At the beginning of their term, they also elect the student representatives to the *Nucleo di Valutazione* (*Evaluation Committee*), the *Comitato Unico di Garanzia* (*Guarantee Committee*), and the Sports Committee.

Each **Study Program** has a certain number of student representatives (the number varies depending on the number of enrolled students). Student representatives are full members of the **Study Program**



Council, the body responsible for defining the Degree Program and Educational Rules for each Study Program. In this context, student representatives contribute to defining how teaching is delivered, analyzing the effectiveness of courses, organizing the study plan, and acting as spokespersons for their fellow students by reporting any issues related to teaching.

If you want to learn more about the role of representatives, as well as the different representation lists present at the Politecnico, we invite you to visit the page [Polimi – Rappresentanti e Associazioni](#).

Work with Us as a Tutor

Politecnico di Milano offers students the opportunity to carry out tutoring activities as part of paid collaborations within the University:

- If you are a Master's degree student, you can support teaching through tutoring activities.
- If you are a Bachelor's degree student, you can take part in *Peer-to-Peer* tutoring activities, assisting fellow students along their academic path.

These collaborations are assigned through specific calls for application and are reserved for students who meet certain academic and financial requirements. Compensation and the number of working hours vary depending on the assigned role.

For more details on requirements, application procedures, and deadlines, visit the page: [Polimi - Paid Collaborations](#).

What's next?

The [Career Service](#) is the professional guidance and placement service of the Politecnico di Milano. It works in collaboration with employers (both private and public companies) and with the Study Programs Councils to offer students, starting from their early academic years, a wide range of initiatives aimed at bringing them closer to the professional world. The goal is to broaden their perspective by presenting them with future opportunities in terms of promising sectors and the most in-demand roles and skills.

Among the services offered by the Career Service:

- **Personalised support programs** with a *Career Advisor*, providing tips for preparing an effective CV, simulating job interviews, and more. [Discover more in the video resources.](#)
- **Special orientation pathways** to explore professional roles in innovation ([Am I an Innovator?](#)) across a variety of settings, from roles in established companies to positions involved in launching new start-ups.
- **Support in identifying internship opportunities**, both before and after graduation ([Internships](#)), as well as assistance in setting them up and formalising them through an *Internship Advisor*.
- **Organisation of orientation and mentoring events** with Italian and international companies (e.g. roundtables, career talks, career competitions, company tours), regularly posted on the website: [[Career Service](#)].

The Nuclear Engineering study program regularly promotes career guidance initiatives aimed at facilitating contact with leading players in the industrial, medical, and scientific research sectors. Through company presentations, testimonials from former students, specialized seminars, and meetings with experts from national and international research institutions, you can explore the opportunities and concrete possibilities for career development or doctoral programs.

The tools increasingly used by the course to convey job-related reports and proposals are the WeBeep platform and the LinkedIn profile.



Contacts

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Admissions: [Davide Bortot](#), [Davide Pizzocri](#)

Graduation/Final exam: [David Dellasega](#), [Elena Macerata](#)

Transfers and programme changes: [Andrea Pola](#)

International Mobility: [Francesco Di Maio](#), [Davide Bortot](#)

Orientation: [Valeria Russo](#)

Tutoring: [Alessandro Maffini](#)

Student Representatives: rappresentastudenti-ccsnucleare@polimi.it

Teaching Secretariat: [Barbara Villa](#)

Useful links

Website of the [School of Industrial and Information Engineering](#)

Website of the [Nuclear Engineering – Master of Science Degree Program](#)

WeBeeP Channel

[Nuclear Engineering](#) LinkedIn Profile - Politecnico di Milano

Student Office: [Online counter](#)

Campus and Services: [Equal Opportunities and Inclusion](#), [Psychological Well-being](#)