POLITECNICO MILANO 1863

School of Industrial and Information Engineering

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

What does a chemical engineer do?

MSc graduates in chemical engineers, or process engineers, develop, design, manage, optimize, and innovate reactors, chemical processes, and complex industrial plants for the production of a wide range of products, from chemical to food, pharmaceutical, and manufacturing industries. Compared to BSc graduates, they possess advanced skills and knowledge of multi-component and multi-phase reactant systems of a physical, chemical, and biotechnological nature, simulation and numerical modeling tools, optimization, and efficient, safe, and sustainable management of processes and plants. They are able to address complex engineering problems with a high degree of autonomy, proposing effective and innovative solutions even in multidisciplinary and international contexts.

Graduates in Chemical Engineering are highly flexible and versatile professionals with strong basic scientific and technical-application backgrounds. They often work in technical coordination roles, collaborating with engineers from other disciplines, data experts, materials specialists, and plant operators to develop and optimize complete and scalable processes and systems, contributing to technological innovation and the energy and environmental sustainability of process industry equipment and systems. Graduates can work in numerous industrial sectors, such as the chemical, pharmaceutical, food, energy production and management, transformation and process industries (textiles, cosmetics, detergents, plastics, and materials in general, etc.), engineering and consulting firms, and technical departments in public administration. Their training also allows them to pursue research and doctoral programs, as well as technical leadership positions in innovation processes at research centres and industrial laboratories.

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.).

The Study Program in Chemical Engineering is a two-year program offering a total of 120 credits (ECTS). The program is designed to provide advanced skills in the design, analysis, production, and management of processes, equipment, and systems of the chemical and process industry, with a strong focus on sustainability, innovation, and internationalization. The program is structured into core and specialized courses, laboratory activities, and the development of an experimental or project-based thesis. Specifically, the program includes 85 credits of required courses, in addition to 20 credits reserved for the thesis and 15 credits of elective courses, offering students the opportunity to customize their educational path. For details on the courses offered in the program, please refer to the Degree Program, available online.

First year

The first year of the Study Program in Chemical Engineering consists of six mandatory courses worth 10 credits, in which students address methodological and specialized topics that form the core of advanced chemical engineering training. The content covers physical chemistry applied to liquid-phase chemical systems, kinetics, fluid dynamics, and the design of chemical and catalytic reactors in multiphase chemical processes, numerical simulation and design of continuous and batch equipment, and process and plant optimization, particularly in the modern organic chemical industry. Special attention is paid to the selection and advanced use of materials, sustainability criteria (economic and environmental), and innovative technologies for production processes. The use of tools for data processing, control, model validation, and process simulation is an integral part of the training; therefore, the courses also include the use of digital tools and advanced simulation software.

Second year

The second year is dedicated to the study of specialized subjects specific to the student's chosen major. Each major has a Pre-Approved Study Plan (PSPA) with advanced courses that deepen skills in a specific application area. These courses allow students to consolidate a targeted preparation consistent with their professional or research goals. The updated list and details of the Pre-Approved Study Plans (PSPA) are available in the online Degree Program. Each PSPA contains 25 credits of mandatory courses, 15 credits of free-choice activities, interdisciplinary projects, and application laboratories. It is also a possible opportunity for students to undertake a period of international mobility or a voluntaryu curricular internship, possibly integrated into the preparation of their thesis. The final thesis, worth 20 credits,

represents a central moment of the program, during which students demonstrate their ability to work independently on a specialized research or technological development topic.

Polimi Ambassador Programs

Students in the Study Program in Chemical Engineering can participate in the Polimi Ambassador program in Green Technologies. To obtain the Ambassador title, students must include additional courses consistent with their chosen program in their study plan. Participation in these initiatives is formally recognized in the Diploma Supplement, issued at the end of the program. The participation procedures and available courses are indicated in the Study Programme Educational Rules.

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.

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 in Chemical Engineering adopts a balanced combination of theoretical and practical activities. Teaching is primarily delivered through classroom lectures, supplemented by exercises, laboratory activities (experimental and/or modeling), and applied projects. Many courses include numerical exercises and computer modeling activities, allowing students to apply theoretical concepts to practical case studies. Teaching activities may also include innovative methods, such as the use of digital platforms for distance learning (WeBeep), online courses (MOOCs), flipped classrooms, blended learning, interactive materials, testimonials, and seminars led by industry experts. Attendance is not mandatory but is strongly recommended, particularly for laboratory activities and courses requiring the use of technical tools and specialized software.

Instructors provide teaching materials tailored to the specific needs of each course and may include textbooks, slides, handouts, selected scientific articles, guided exercises, and, in many cases, lecture recordings available on dedicated platforms (primarily the WeBeep channel for the specific course). For details on the teaching and examination methods adopted by each academic course, please refer to the course syllabus, available online.

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

In order 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/herStudy 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.

Assessment methods vary depending on the type and objectives of the course, but generally include written tests, oral exams, technical reports, and individual or group projects. Some courses, especially those with strong applied and laboratory content, include practical exercises and the development of technical reports. Assessment methods may include open-ended or multiple-choice questions, and sometimes the solution of problems inspired by real-life technical cases, as indicated in the individual course syllabi. The specific assessment methods are described in detail in each course syllabus, accessible through the Study Plan available online on the Politecnico website.

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 exam for the Study Program in Chemical Engineering consists of the development and public defense of an original thesis written by the student, under the guidance of a supervisor. The thesis, which worth 20 CFU (ECTS), may be completed within a Politecnico di Milano research group, in collaboration with companies or external research institutions, including international ones. The work may include modeling, simulation, design, experimental activities, or methodological development, and is intended to assess the student's ability to independently and critically apply the knowledge acquired during the course of study.

If a thesis is being written in a company, the student is expected to have a Politecnico di Milano faculty member as a point of reference, who will act as supervisor and with whom the topic to be developed within the company context and the type of work possible will be agreed upon. Furthermore, a company tutor will act as the student 's point of contact within the company. It is recommended that alignment meetings be organized with the company tutor, supervisor, and student. If, however, a thesis is being written at a foreign university, the student is expected to have a Politecnico di Milano faculty member as a point of reference, who will act as supervisor, and a professor at the foreign university as a tutor (who may also act as co-supervisor for the thesis). The topic to be developed in a thesis at a foreign university can be proposed directly by the supervisor at the Politecnico di Milano, based on existing contacts and collaborations with other universities, or it can be proposed by the student who has come into contact with professors at a foreign university. In this case, the student must contact a professor at the Politecnico who is responsible for the topic and agree on the availability to develop a thesis in collaboration with the professor at the foreign university.

Students may be notified of available thesis projects (both internal and external to the Politecnico di Milano) on the WeBeep page of the supervisor's course, on the thesis noticeboard, or directly by the course instructors.

It is important to specify that, although it is possible to agree in advance between the student and the supervisor on the type of thesis project the student intends to develop, the value of the thesis content can be assessed by the supervisor only after analyzing the results obtained and the paper produced. The methods for calculating the degree grade are described in the Final Exam Supplementary Regulations for the Study Program.

Thesis writing template

The School has prepared a series of templates available to students for writing their Master's thesis. The available templates are the following:

- Classic format: used for writing the thesis according to the traditional approach;

- Article format: Used as an alternative to the classic format, it adopts the typical style of a scientific article (approximately 30 pages). IMPORTANT: Students must agree with their supervisor to use this format, which must be an option for the study program.

● Executive Summary: used to draft the "Extended Summary", in English, mandatory and with a maximum length of 6 pages.

The templates are available in both LaTeX and MS Word formats. You can download them directly from the School website or find them on the Overleaf platform.

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*.

Throughout their studies, students can rely on various forms of support designed to facilitate learning and tackle the more challenging courses more effectively. There are no specific tutoring options for students within the MSc study program. Only some first-year MSc courses are tutored. Tutors are provided by doctoral and postdoctoral students who have acquired specific expertise in certain topics. Many courses make **teaching materials available through the WeBeep platform, such as slides,** completed exercises, exams from previous years, and in some cases even recordings **of lectures**. Some courses offer **midterm tests** and self-assessment tools to monitor learning throughout the semester. Open online courses (MOOCs) are also available on platforms such as **Polimi Open Knowledge (POK)**. Instructors offer **weekly office hours**, during which students can request clarification or individual insights.

Study support is designed to support students on an ongoing basis, promoting not only their understanding of the content but also their ability to maintain an effective and independent study method. By the time they reach their first year of the MSc study, students have developed the skills necessary to independently manage their study time. This goal is easily achieved if students establish a routine and commit to sticking to it regularly, until it becomes deeply ingrained in their behaviour.

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.

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*.

In addition to curricular courses, the Chemical Engineering Study Program offers several opportunities to enrich the curriculum through extracurricular activities. Students can participate in **technical, cultural, and personal development initiatives** promoted by the Politecnico di Milano, such as the **"Passion in Action" program courses**, which range from technological innovation to entrepreneurship, from scientific communication to transversal skills. Students participating in these initiatives will have the opportunity to foster the development of transversal, soft, and social skills. Acquired skills are recognized through mention in the Diploma Supplement.
Students who meet the required requirements can also access the Alta Scuola Politecnica (ASP), which allows students to undertake an interdisciplinary project path between the Politecnico di Milano and the Politecnico di Torino.
Student associations are active in organizing projects, competitions, workshops, and training activities, often in collaboration with companies and faculty.
Throughout the year, the study program also offers **company visits**, **seminars** with experts, and **career guidance activities**, allowing students to experience the world of industrial engineering in real-world settings. These experiences provide an opportunity to test themselves, develop complementary skills, and build a more comprehensive and dynamic educational profile.

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.

Taking part in an experience abroad allows you to broaden your perspectives, improve your language and interpersonal skills, and experience different academic environments, representing added value both personally and professionally. During your MSc study program, you can undertake a study period or internship abroad thanks to the international mobility programs offered by the Politecnico di Milano. Among these, the most popular is the **Erasmus program**, which allows you to attend courses and take exams at partner universities in Europe, with the credits earned being recognized. **Bilateral exchange programs** with non-European universities are also available. All activities undertaken abroad must be approved in advance by the **Study Program's International Mobility Committee**, which ensures their consistency with the study plan. Calls for applications are published twice a year and are accompanied by informational meetings, information on available destinations, and support in compiling the international study plan.

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 Master's degree program in Chemical Engineering does not include a compulsory or elective curricular internship. However, interested students may undertake a voluntary curricular internship (*curricolare facoltativo*) at a company or organization affiliated with the Politecnico di Milano, in Italy or abroad. This internship must be approved in advance by the **Study Program Internship Committee (SAT).**

During the internship, students have the opportunity to experience professional realities, apply the skills they've acquired during their studies, and develop transversal skills such as teamwork, technical communication, and time management. An internship can also be a valuable experience for gaining greater awareness of career opportunities and enhancing your resume before entering the workforce.

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**].

Upon completion of their Study program, MSc Chemical Engineering graduates have access to several career opportunities, including positions of responsibility and leadership in both industrial and public sectors, or in private practice. They can work in plant and equipment design, production systems and process management, and process and product research and development, operating effectively and responsibly in advanced and complex technological environments. Their multidisciplinary training allows them to enter chemical industries, engineering firms, and process industries in general (pharmaceutical, electronics, biomedical, energy, automotive, etc.). Other opportunities are available in consulting firms, service providers, and public entities.

Alternatively, students can choose to continue their education by accessing a PhD, a second-level university Master's degree or higher education courses such as the Alta Scuola Politecnica.

The Politecnico di Milano offers career support services through its Career Service, which offers internship opportunities, meetings with companies, career days, and career guidance initiatives.

Contacts

Coordinator/President of the Study Programme: Prof. Marco Derudi

Study Plans: Prof. Lidia Castoldi

Admissions: Prof. Carlo Visconti (Italian students), Prof. Alberto Cuoci (foreign students)

Graduation/Final exam: Prof. Carlo Visconti

Transfers and programme changes: Prof. Carlo Visconti

International Mobility: Prof. Marzio Invernizzi, Prof. Fabio Parmeggiani

Orientation: Prof. Matteo Pelucchi, Prof. Tiziano Faravelli

Tutoring: Prof. Alessandro Sacchetti

Internships: Prof. Alessandro Sacchetti

Student Representatives: rappresentastudenti-ccschimica@polimi.it

Teaching Secretariat (Department of Chemistry, Materials and Chemical Engineering "G. Natta"): Luigi Megna

See: Chemical Engineering Contacts

Useful links

Website of the School of Industrial and Information Engineering

Website of the Chemical Engineering Study Programme

WeBeeP Channel: Chemical Engineering

Student Office: Online counter

Campus and Services: Equal Opportunities and Inclusion , Psychological Well-being