



POLITECNICO
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School of Industrial and Information Engineering

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

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What does a food engineer do?

A food engineer is a professional figure at the intersection of engineering, food science, and industrial management. Their role is to design, analyze, and optimize production processes in the food industry, ensuring plant efficiency, product quality and safety, and the environmental and economic sustainability of operations.

They work across all stages of the food supply chain: from raw material extraction to food processing and preservation, all the way to logistics and distribution. They may be responsible, for example, for production line design, new food product development, environmental impact analysis of processes, quality control, or product traceability.

Furthermore, thanks to their cross-disciplinary training, food engineers are able to communicate with diverse professional figures (food technologists, chemists, biologists, management engineers, and mechanical engineers) and integrate into international contexts, thanks in part to the program's innovation- and sustainability-focused approach. They are strategically positioned in a rapidly evolving sector, where global challenges related to equitable access to natural resources, waste reduction, and sustainable food production are being addressed.



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 Food Engineering at the Politecnico di Milano has been carefully designed to address the complex and ever-evolving challenges of the modern food industry.

The program is designed to provide students with a comprehensive understanding of food production processes, combining fundamental elements of chemical, mechanical, and management engineering. This multidisciplinary nature is essential to meet the challenges of the food industry, which requires knowledge in various fields.

The program comprises a 120-credit curriculum, of which **95 are mandatory**, divided between chemical engineering-related courses and complementary courses in management,

mechanical, and energy engineering. In addition, **15 credits are reserved for the thesis** and **10 credits are available for elective study**, offering to students the opportunity to further customize their educational path.

The program spans four semesters and offers a solid, multidisciplinary education designed to address the many challenges of the modern agri-food sector. It focuses not only on the technical aspects of products and processes, but also explores cross-cutting themes related to sustainability, industrial management, food safety, and innovation.

In the **first semester** students are introduced to the world of food engineering through fundamental courses in food chemistry, food technology, product characteristics and agri-food supply chain management. The goal is to provide a clear understanding of the field and its main challenges.

In the **second semester** the focus shifts more specifically to the management and operational dimension. Topics such as quality management, logistics, production organization, and procurement are addressed, with particular attention to the specificities of the food industry.

The **third semester** features a more interactive and business-oriented teaching approach: more seminars with companies, group activities, and workshops enhance the technical training. This phase provides an in-depth analysis of the entire food supply chain, exploring aspects related to product development, process efficiency, and environmental sustainability.

The **fourth semester** is dedicated to practical experience and the completion of the program. Students also work on the preparation and defense of their thesis.

During either the third or the fourth semester, each student must complete **10 credits of elective courses**. These can be obtained in two ways:

- carrying out a **5 CFU internship** ;
- or by choosing **one or more optional courses** from those available, without doing the internship.

The optional courses are organized into the following thematic groups:

- Processes for the food industry
- Food industry management
- Food Industry 4.0
- META-IUS Group
- GREEN AMBASSADOR Group

To consult them, refer to paragraph 7 of the Study Program Educational Rules (https://onlineservices.polimi.it/manifesti/manifesti/controller/extra/RegolamentoPublic.do?ja_f_currentWFID=main&EVN_DEFAULT=evento&aa=2024&k_corso_la=498&lang=IT).

This flexibility allows everyone to adapt their training path to their professional aspirations and specific interests.

The curriculum also promotes project **-based learning**, where students address real-world problems in collaboration with industry companies. This approach develops key skills such as goal setting, data analysis, teamwork, and leadership in complex and uncertain environments.

During the admission process, the admissions committee evaluates the student's profile and may decide to assign some exams as **curricular integrations**, exams that must be passed by the student in order to enroll (see paragraph 6.2 of the Study Program Educational Rules: https://onlineservices.polimi.it/manifesti/manifesti/controller/extra/RegolamentoPublic.do?ja_f_currentWFID=main&EVN_DEFAULT=evento&aa=2024&k_corso_la=498&lang=IT)

To ensure that all students achieve the required skills, a course may be assigned as a **curricular requirement during student admissions**. In particular:

- Students who need to strengthen their knowledge of chemical engineering must take the course "**Engineering Properties of Food**" (5 credits) in their first year. They must also complete the course "**Food Packaging Materials**" (5 credits) in their second year.

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.

For students of the Study Programme in Food Engineering, to obtain the **Green Ambassador in Technologies certification** , it is necessary to:

- Complete **10 CFU** through two mandatory courses:
 - *Agri-Food Supply Chain Perspectives*
 - *Sustainable Energy for the Food Industry*
- Choose an additional **20 CFU** by choosing courses from those indicated in a specific list in the educational rules (https://onlineservices.polimi.it/manifesti/manifesti/controller/extra/RegolamentoPublic.do?jaf_currentWFID=main&EVN_DEFAULT=evento&aa=2024&k_corso_la=498&lang=IT, paragraph 7.3.1).

Of these, **10 CFU** can already be included in the free-choice courses of the study plan.



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 adopts a structured training approach, mainly based on **lecture-based teaching (DT)** and **participatory teaching (DI)** , and enriched by **laboratories (DL)** and **project-based teaching (DP)** .

Evaluation-based teaching (**DV**) is not foreseen for any course.

During the first year, the division into semesters is most evident, relating to the courses belonging to the Department of Chemical Engineering (1st semester) and those relating to the Department of Management Engineering (2nd semester), with the exception of the course on Agri-Food Supply-Chain Perspectives, present in the first semester as an introductory course on the management aspects of the role of the food engineer.

A distinctive aspect of the course is its desire to provide theoretical but above all practical tools through traditional lectures and exercises accompanied by laboratory activities, mandatory and optional projects (mandatory for 80% of the courses in the first semester of the first year, considering the organization of the 2024/2025 academic year), software exercises, seminars and organized trips to visit the plants and production processes of the companies involved in the activities listed above.

Semester summary (percentage intended as number of courses adopting a specific teaching approach vs total number of courses in the semester)

Semester	DT	FROM	DL	DP	DV
1st year - 1st semester	100%	60%	20%	80%	0%
1st year - 2nd semester	100%	67%	67%	66%	0%
2nd year - 1st semester	100%	50%	50%	75%	0%
2nd year - 2nd semester	100%	100%	0%	100%	0%

Course details (referring to the 2024/2025 academic year)

1st year - 1st semester

- Agri-Food Supply Chain Perspectives (DT, DI, DP)
- Unit Operations and Processes of Food Industry (DT, DI, DP)
- Principles of Food Manufacturing (DT, DI, DP)
- Technologies for Food Chemistry (DT, DI, DL)



- Food Packaging Materials (DT, DI, DP)

1st year – 2nd semester

- Quality Data Analysis (DT, DI, DP optional)
- Purchasing & Operations Management (DT, DP)
- Logistics Management (DT, DI)

2nd year – 1st semester

- Trends in Food Industry Lab (DP + peer-to-peer)
- Microbiology in Process and Product Engineering (DT, DL, optional DP)
- Plants in Food Industry (DT, DI, DL)
- Management Tools and Analytics in the Food Industry (DT, DI, DL, optional DP)

2nd year – 2nd semester

- Sustainable Energy in Food Industry (DT, DI, DP optional)

There are also some digital learning initiatives aimed at developing digital skills:

- The use of Excel in the teaching of Food manufacturing (first semester, first year) and Microbiology Laboratory in process and product engineering (first semester, second year) and Technologies for food chemistry (first semester, first year).
- The use of Python in the teaching of Quality Data Analytics (second semester, first year) and Management tools and analytics in the food industry (first semester, second year).
- The use of Signavio software in the field of Management tools and analytics in the food industry (first semester, second year).
- Software development of a Digital Twin model during the Plants in the food industry course (first semester, second year).



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/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.

The course aims to provide students with theoretical but, above all, practical tools, as demonstrated by the table below, which highlights the concreteness of the approach from the first semester, when 80% of the courses propose project activity as a mandatory part of the final assessment.

Written exams remain the primary form of assessment, accompanied by optional projects designed to increase the final grade, or by mandatory projects that have a certain influence on the final grade. However, some courses also require a mandatory oral exam, either in the form of an oral exam on course topics or a group presentation of a project completed throughout the semester.

*The program includes a combination of **written and software-based tests and project activities**, distributed according to the characteristics of the courses. Students can take up to five exam sessions for each course.*

Semester summary (referring to the 2024-2025 academic year) (percentage intended as number of courses adopting a specific teaching approach vs total number of courses in the semester)

<i>Semester</i>	<i>Written exam</i>	<i>Mandatory oral exam</i>	<i>Optional oral exam</i>	<i>Mandatory project</i>	<i>Optional project</i>	<i>Exam using software</i>
<i>1st year - 1st semester</i>	<i>60%</i>	<i>40%</i>	<i>0%</i>	<i>80%</i>	<i>0%</i>	<i>20%</i>
<i>1st year - 2nd semester</i>	<i>100%</i>	<i>0%</i>	<i>33%</i>	<i>33%</i>	<i>33%</i>	<i>33%</i>



<i>2nd year - 1st semester</i>	<i>50%</i>	<i>0%</i>	<i>0%</i>	<i>25%</i>	<i>50%</i>	<i>25%</i>
<i>2nd year - 2nd semester</i>	<i>100%</i>	<i>0%</i>	<i>100%</i>	<i>0%</i>	<i>100%</i>	<i>0%</i>

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 consists in the preparation and defense before the graduation commission of the final thesis, the score of which varies depending on the method used to complete it. There are two types of methods:

1. **Experimental thesis or *dissertation*** (max 7 points): this type of thesis can be carried out within research groups at the Politecnico di Milano, in a company, or abroad (project with a research group at a foreign university or corporate experience).

If the thesis is conducted internally at the Politecnico di Milano, the faculty member to whom student asked a thesis acts as supervisor, while other researchers, PhD students,



or research fellows from the same research group may act as co- **supervisors** . The latter usually participate more actively in laboratory activities and are therefore intermediaries between the supervisor and the thesis student. The supervisor, however, remains the student's primary point of contact throughout the thesis.

The main characteristics of experimental theses or *dissertations* are the following:

- Analysis of existing literature on the topic
- Formulating a research model or framework
- Presence of experimental analyses (in the laboratory or through data collection on the company)
- Significant and innovative results

The experimental thesis is submitted to the evaluation of an examiner, a professor expert in the topic who independently evaluates the work once it has been submitted.

The final thesis score is assigned according to the following distribution: 50% of the score is awarded by the supervisor, 20% by the examiner, and the remaining 30% is assigned by the graduation committee. This distribution reflects the varying degrees of involvement in the various phases of the thesis project.

2. **Thesis or "tesina"** (max 4 points): This type of thesis typically requires the student to conduct bibliographic research to determine the state of the art on the topic. The thesis may also include other forms, such as the development of a business case study or data collection and analysis based on an existing, consolidated model. In this case, too, the student selects a thesis **supervisor** with whom they will collaborate throughout the development of the project.

For the dissertation, the thesis is not evaluated by an examiner, and the final score is assigned equally between the supervisor and the graduation committee. 50% of the score is awarded by the supervisor, while the remaining 50% is assigned by the graduation committee, based on the quality of the thesis and the final discussion.

Both types of theses described above can be done by a single student or by a pair of students.

Theses in companies and theses at foreign universities can be developed either as experimental theses or as thesis/tesina.

If a thesis is being completed within 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 will coordinate the topic to be developed within the company context and the type of work that can be undertaken



(whether an experimental thesis or a dissertation). Additionally, a company tutor will act as the student's in-company interface. Alignment meetings may be organized with the company tutor, supervisor, and student.

If a thesis is being completed 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 faculty member at the foreign university as a co-supervisor. The topic to be developed in a thesis at a foreign university can be proposed directly by the Politecnico supervisor, based on existing contacts and collaborations with other universities, or it can be proposed by the student who has contacted faculty members at a foreign university. In this case, the student must contact a Politecnico di Milano faculty member who is responsible for the topic and agree on the possibility of developing a thesis in collaboration with the faculty member at the foreign university.

Students are notified of available thesis projects (both internal and external to the Politecnico) on the supervisor's WeBeep course page, on the thesis noticeboard, but they can also be reported directly by the instructors in the classroom.

Finally, 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 that the student intends to develop, the value of the contribution, in order to achieve the status of experimental thesis or *dissertation*, can be assessed by the supervisor only after an analysis of the results obtained and the work produced.

Thesis Templates

The School has prepared a series of ready-made 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 traditional 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 cases where there is a thesis examiner.

The templates are available in both **LaTeX** and **MS Word formats** . You can download them directly 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](#).

The material provided by professors and covered during classes is periodically updated on the WeBeep platform. All lecture files, including in some cases recordings, are available on the platform throughout the semester.

For *Food Engineering* students who do not have a BSc degree in Management Engineering, the MOOCs on the Polimi Open Knowledge platform are particularly relevant:

- **Fundamentals of Operations** , taught by Prof. Mangiaracina, which introduces the fundamental concepts relating to production and logistics systems, including models and theoretical approaches useful for managing industrial processes.
- **Accounting** , taught by Professor Deborah D'Agostino, is useful for acquiring basic accounting knowledge and understanding the economic and financial mechanisms, essential for tackling the management disciplines of the course.



These MOOCs represent a valuable resource both for filling any existing knowledge gaps and for anticipating some of the content covered in classroom courses.

There are also two MOOCs relating to two research methodologies useful for developing the thesis in the management field:

- **Case study methodology** , taught by Prof. Antonio Ghezzi, who introduces the case study methodology and the steps required to conduct research based on this methodology.
- **Survey Research Methodology** , taught by Professor Federico Caniato, introduces the fundamental concepts for understanding when to use a survey, how to create a research model, how to design a questionnaire, how to identify a sample, how to collect data, how to analyze it, and how to interpret the results.



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](#).

During the two-year program, students can be offered various extracurricular activities to complement the classroom lectures, enhance the knowledge acquired during the specific course, and gain real-world experience in putting what is taught into practice. Two different

types of curricular activities are typically offered, which vary based on the program and the availability of invited guests: seminars and company visits.

- **Seminars:** These are face-to-face meetings with industry experts, invited by the course instructors to present a topic of interest related to the specific exam. To make the experience more engaging, a seminar may replace a regular lecture given by the instructor. Regardless of the seminar's purpose, the content covered is always relevant to the course syllabus.
- **Company visits:** these are offered to gain direct field experience and are organized with companies operating in the food industry at various levels. These visits are a great opportunity not only to see how the teaching is applied in the workplace, but they can also provide opportunities for networking and subsequent internships or theses with the companies themselves. Collaboration with companies in the sector is one of the great strengths of this degree program, even within mandatory courses, such as the Trends in Food Industry Lab, during which students work closely with selected companies to develop a project for the entire semester in which the program is taught.

Below are the courses during which extracurricular activities are offered, distinguishing between seminars and company visits, and examples relating to the 2023-2024 and 2024-2025 academic years (initiatives might change from one academic year to another).

- **Unit Operation and Processes:** company visits (SOREN Srl ; Zoogamma SpA), seminars (P&Pag ; TECOMA; “Edible Oil Processing and Analysis: Methods and Trends” with Dr. Asia Kalinichenko from the University of Tübingen; Spraying Systems Co.)
- **Trends in the Food Industry Lab:** seminars (“Intellectual property and patents in innovation” with Ing. Gaetano Cascini, Polimi Mechanical Department; seminar with Nestlè on food safety and quality)
- **Logistics Management:** company visits (Esselunga , Number 1)
- **Agri Food supply chain perspective:** seminars (Esselunga)
- **Microbiology in process and Production Engineering:** seminars (Solenis)

The Carrier Service offers students the opportunity to participate in extracurricular activities in a variety of fields, in addition to those proposed directly by program instructors, recommended via the University email address. The goal is to broaden the educational spectrum offered, especially with a view to post-degree careers.



As for student associations, there are some within the Politecnico di Milano that propose to deal with topics that may also be of interest to the Food Engineering student, specifically Enactus Polimi (since 2020), Entrepreneurship Club Polimi (since 2020) and JEMP (Junior Enterprise of Politecnico di Milano, since 2016).

- **Enactus Polimi** is a student association committed to solving global, social, and economic challenges through innovative projects. The association's founders and members identify with three key words: **sustainability** , **entrepreneurship** , and **community** , which they pursue through collaborations aimed at creating high-impact solutions, while also offering the opportunity to experiment with these aspects in project development. Based on the **17 UN Sustainable Development Goals** , this association represents a great opportunity for FE students to apply their studies and make a difference, contributing knowledge to a globally relevant sector.

If a student was passionate about start-ups and wanted to launch his/her own, he/she could find two associations to support him:

- **The Polimi Entrepreneurship Club** aims to be a community of students that offers the opportunity and support to learn, innovate ideas, connect with industry professionals and mentors, and ultimately turn these ideas into reality in the form of startups. Members can explore the startup ecosystem in Europe, visiting companies and meeting founders, while experiencing other cultures and broadening their horizons.
- **JEMP** is a student association dedicated to responding innovatively and constructively to the evolving needs of the world of work, with passion and dedication. This nonprofit association aims to bridge the gap between academia and the professional world by offering consulting services to startups, SMEs, and international companies. Its consulting services aim to innovate and improve companies in various areas, including business, IT, marketing, and design. Members produce high-quality results that exceed expectations, thanks in part to the skills acquired at Politecnico. Students with diverse academic backgrounds collaborate on projects, and this diversity is key to delivering comprehensive results and unconventional solutions.

Among the opportunities for active participation in university life is the possibility of joining the **Student Experience Committee** . This is a working group made up of students from the Food Engineering program (and beyond), with the aim of analyzing and improving the university experience at the Politecnico di Milano. The work is primarily carried out in teams but also



includes discussions with committees from other master's programs, to gain a broader understanding of student needs.

Some of our program's key faculty members—Professor Ciccullo, Professor Masi, and Professor Rossi—serve as a bridge between the committee and the Study Program Council (CCS), where the analyses conducted and discussed with the faculty are presented. For example, in the spring semester, students were given a questionnaire regarding various aspects of their experience (exams, projects, campus life, mental well-being, etc.). The results were analyzed and summarized in a presentation that initiated a constructive dialogue with the professors. Another concrete example of the committee's work is this document, written to improve the curriculum and make the experience within our master's program clearer and more accessible.

The project has a long-term vision, with different goals each semester, always aimed at improving the quality of student life. Commitment is not continuous throughout the entire semester but concentrated in specific periods. Upon completion of participation, participants are also awarded a LinkedIn badge as recognition. Joining the committee represents a significant opportunity to actively contribute to the Politecnico student community.

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.

Students taking the MSc in Food Engineering have the opportunity to participate in international mobility programs. These programs are designed to enrich the academic experience and are based on specific agreements relevant to the program of study.

The main types of agreements include:

1. **Erasmus+ agreements** : These are collaborations with European universities that allow student exchanges within the EU.



- **Czech Republic** – Tomas Bata University in Zlín
 - **Denmark** – Technical University of Denmark
 - **France** – Université de Montpellier
 - **Germany** – University of Bonn
 - **Netherlands** – BI Norwegian Business School and NTNU - Norwegian University of Science and Technology
 - **Spain** – Technical University of Catalonia
 - **Sweden** – Chalmers University of Technology, KTH Royal Institute of Technology
 - **Turkey** – Middle East Technical University
2. **Bilateral agreements** : These are agreements with non-European universities that allow exchanges outside the EU.
- **Argentina** – Universidad de la Empresa
 - **Colombia** – Universidad de los Andes

However, these agreements may change over time, so it is always advisable to check the Politecnico di Milano official website for updated information.

To explore partner universities and available agreements specifically for the Food Engineering degree program, you can use the Politecnico di Milano **mobility agreements map** . Select the "School of Industrial and Information Engineering" and filter by the "Food Engineering" degree program to view the relevant agreements. (*International Mobility – Food Engineering – Politecnico di Milano*)



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.

Students enrolled in the Study Program in Food Engineering are given the opportunity to undertake an internship, with a distinction between elective curricular internship (“curricolare opzionale”) and curricular but voluntary Internships (“curricolare facoltativo”).

Elective Curricular Internships (Curricolare opzionale)

These internships are integrated into the degree program and can be completed during the second year, first semester, or second semester. However, they must be included in the program before the internship begins. This type of internship covers 5 of the 10 credits of free-choice courses that the student must complete.

- **Duration** : 125 hours (5 ECTS credits), to be completed full-time (maximum 40 hours/week) or part-time (maximum 20 hours/week). The internship must conclude at least one month before graduation.
- **Location** : In Italy or abroad, at public or private institutions.
- **Tutor** : Students must select an academic tutor from among the Food Engineering course professors to ensure the activity is consistent with the study plan.
- **Evaluation** : The internship is recognized with CFU but is not assessed with a grade.

Curricular but voluntary Internships (Curricolare facoltativo)

Unlike optional curricular internships, these are not included in the degree program and do not carry university credit. However, they still offer valuable professional experience.

- **Duration** : 1 to 12 months. The internship must be completed before graduation.
- **Location** : In Italy or abroad, at public or private institutions.
- **Tutor** : A university tutor will be assigned automatically. However, for thesis-related internships, students must identify a supervisor among their faculty before starting the internship to ensure academic consistency.

Curricular but voluntary internships (“curricolare facoltativo”) which are not related to the thesis are managed by the Career Service. Elective curricular internship (“curricolare opzionale”) and curricular but voluntary internships (“curricolare facoltativo”) and related to the thesis are managed by the SAT (Academic Internship Structure).

For the Food Engineering program, the SAT contact is **Professor Irene Roda**.

Email for information: stage-foodengineering@polimi.it

Direct contact: irene.roda@polimi.it



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How to Find and Start an Internship

Students can find internships through several channels:

Career Service Portal – A platform listing relevant internship opportunities for the Food Engineering program:

<http://www.careerservice.polimi.it/it-IT/Internship/Company/Index/>

Independent search – Students can contact companies directly or rely on the suggestions of their instructors.

Career Events – University-organized events to connect students and industry professionals.

Once an internship is found, students must follow these steps:

- **Internship Agreement** – The host institution must complete an online form at least 10 working days before the start of the internship.
- **Training Project** – Once approved, the student will receive an email with instructions for completing the internship activation.

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](#)].

Food Engineering graduates possess a broad range of knowledge, from Chemical and Materials Engineering to knowledge of industrial plants in the food industry, and knowledge of both business management and transport logistics. This study program allows graduates to decide whether to pursue a career in business or pursue research in an academic setting, as numerous PhD programs, both within and outside Politecnico di Milano, offer opportunities for pursuing research in the food sector.

Experience over the years since the Study Program has been offered has shown that companies are very interested in Food Engineering graduates. Their highly diverse training, including their previous career path (bachelor's degree, previous work experience, or other), makes them unique figures in the food industry.

PhD students are often recommended directly by their program instructors if they have projects that might be of interest to MSc students. They may be proposed as an extension of their thesis project if the thesis is conducted as part of a university research program.



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Contacts

Coordinator/President of the Study Programme: **Flavio Manenti** (flavio.manenti@polimi.it)

Study Plans: **Stefania Moioli, Laura Capelli** (stefania.moioli@polimi.it ; laura.capelli@polimi.it)

Admissions: **Federica Ciccullo, Laura Capelli, Claudia Colicchia** (federica.ciccullo@polimi.it ; laura.capelli@polimi.it ; claudia.colicchia@polimi.it)

Graduation/Final exam: **Fabio Parmeggiani** (fabio.parmeggiani@polimi.it)

Transfers and programme changes: **Federica Ciccullo, Laura Capelli, Claudia Colicchia**

International Mobility: **Irene Roda** (irene.roda@polimi.it)

Orientation: **Gianvito Vilè** (gianvito.vile@polimi.it)

Tutoring: **Veronica Lèon Bravo** (veronica.leon@polimi.it)

Internship: **Irene Roda**

Student Representatives: rappresentativestudenti-ccsfood@polimi.it

Teaching Secretariat: **Luigi Megna** (luigi.megna@polimi.it)

Useful links

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

Website of the Study Programme

WeBeeP Channel: <https://webeep.polimi.it/course/view.php?id=2601>

Student Office: [Online counter](#)

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