



POLITECNICO
MILANO 1863

School of Industrial and Information Engineering

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

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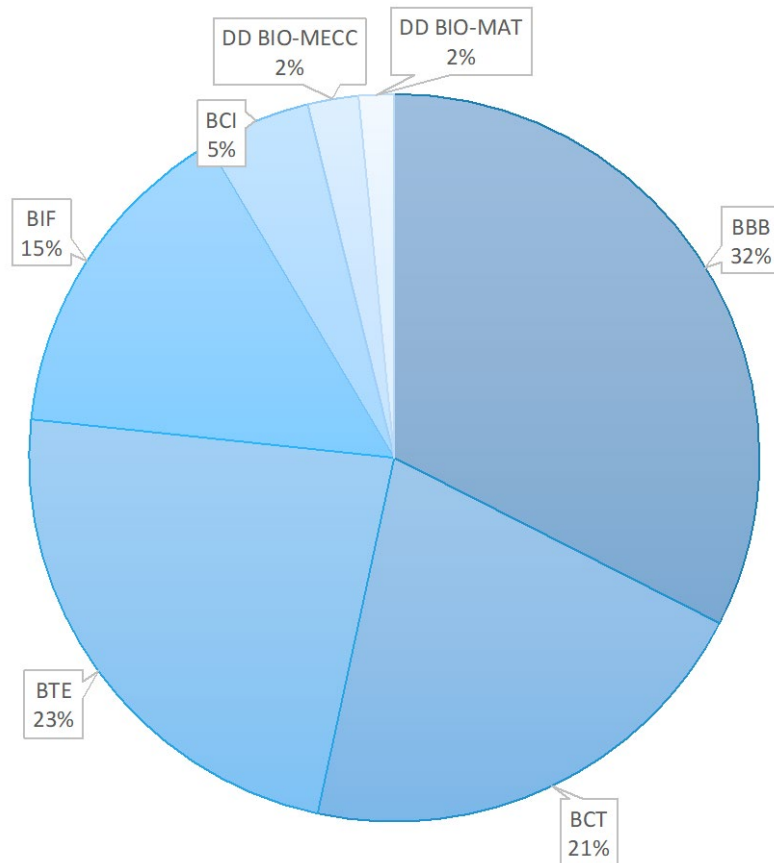
What does a biomedical engineer do?

The professional profile of a biomedical engineer varies depending on the Study Plan (PSPA) chosen upon enrollment in the Study Program:

- PSPA Biomechanics and Biomaterials (BBB): expert in methodologies specific to mechanics, biomechanics, thermofluid dynamics, and materials science with particular attention to biocompatibility, device effectiveness, interfaces with biological systems and their modeling;
- PSPA Engineering for Biotechnology, Cells and Tissues (BCT): expert in micro-nanotechnology, molecular biomechanics, microfluid dynamics, data analysis methods for genomics, proteomics and molecular biology applications, cellular systems, biotechnology, bioartificial tissues;
- PSPA Electronic Technologies (BTE): expert in the methods of electronic bioengineering, applied to the design of sensors, biosensors, microtechnologies and the development and design of electromedical devices and equipment; expert in the modeling of biological systems and artificial-biological interfaces;
- PSPA Bioengineering Information (BIF): expert in healthcare devices with a strong ICT component; engineer in data integration processes, interface design and customization, design and management of biomedical data processing algorithms, bio-inspired intelligent systems;
- PSPA Clinical Engineering (BCI): engineer in companies producing and/or supplying devices, instrumentation and healthcare technologies, manager of biomedical technologies in public and private hospitals, in external service companies;
- There is the possibility of enrolling in a limited-access internal Double Degree program within the University in conjunction with the Study Program in Mechanical Engineering. This program aims to address the emerging needs of the Italian and European biomedical industries, which are seeking a new professional figure capable of combining the typical skills of a biomedical engineer with the technical expertise of a mechanical engineer. The integration of the Biomedical Engineering and Mechanical Engineering programs results in a solid technical education well-matched with a biomedical vision.
- There is the possibility of enrolling in a limited-enrollment internal Double Degree program within the University in conjunction with the Study Program in Materials and Nanotechnology Engineering. This program aims to develop expert professionals with a solid background in materials science, well-connected to a biomedical vision, and therefore of great interest to biomedical industries developing products in the fields of



biomechanics and biomaterials with their applications in the biomedical sector. Integrating the study programs of Biomedical Engineering and Materials and Nanotechnology Engineering offers a unique opportunity to leverage the key advantages of both approaches, enabling a synergistic approach to problem-solving.



The table shows the distribution of students entering the Master's Degree program (academic year 2024/25) and the breakdown among the various PSPA programs offered. BBB: Biomechanics and Biomaterials; BCT: Engineering for Biotechnology, Cells, and Tissues; BTE: Electronic Technologies; BIF: Information Bioengineering; BCI: Clinical Engineering; DD BIO-MECC: internal dual degree in Biomedical Engineering and Mechanical Engineering; DD BIO-MAT: internal dual degree in Biomedical Engineering and Materials and Nanotechnology Engineering.



The image shows some examples of possible research results and possible applications closely related to the different proposed PSPAs.



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 Biomedical Engineering includes, for each PSPA, a core course and elective courses related to biomedical engineering, bioengineering of physiological systems, laboratory courses, biomedical sciences, and courses offered by other programs at the Politecnico di Milano. The credits are distributed among these courses, as shown in the following table.

Furthermore, when enrolling in the Study Program and completing their study plan, students can participate in interdisciplinary programs (Ambassador in Smart Infrastructures, Ambassador in Inclusivity Design, and Smart Wearable Technologies interdisciplinary program) offered at the University level in which the Study Program in Biomedical Engineering participates, as shown in the box below.

1. First year

During the first year, students take a course that characterizes the PSPA chosen upon enrollment and have the opportunity to select courses that delve into specific aspects of biomedical engineering and biomedical sciences.

2. Second year

In the second year of the Study Program, students may choose more in-depth courses related to bioengineering. Additionally, they must choose an experimental laboratory course, during which they will have the opportunity to complete laboratory work in an aspect of bioengineering. Students may also choose a second laboratory course from among those offered in two or more degree programs and capstone projects. In inter-degree programs, students have the opportunity to interact with students from other study programs and thus undertake transdisciplinary laboratory work. In the case of capstone projects, groups of biomedical engineering students will be offered projects presented by companies to complete during the semester. The student groups will be supervised by a university tutor and a company tutor. In the second year, students will begin their thesis work, the final and essential phase of the program, leading to the degree.

TABLE DISTRIBUTION OF ECTS IN THE STUDY PROGRAM

Subjects	# courses x ECTS
Mathematics/Chemistry/Biotechnology	1 x 12
Medical Sciences	1 x 6
Biomedical Engineering (Basic)	3 x 10
Bioengineering of Physiological Systems	1 x 5
Free choice	1 x 10
Biomedical Engineering (Advanced)	2 x 10
Laboratory teachings	1 x 5
Free choice	1 x 10 + 1 x 5
Thesis	17



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 offers a diverse curriculum mix, incorporating elements from various teaching methods (see Table). Specifically, in the first year, classroom-based teaching tends to prevail, with some elements of participatory teaching. In the second year, laboratory and assessment-based teaching components are increasingly integrated. Teaching is primarily delivered through lectures, classroom exercises, experimental or computational laboratory activities, individual or group project work, and seminars with industry experts. Furthermore, some courses include the analysis of real-world case studies to foster the practical application of theoretical knowledge.

Some teachers use platforms (e.g., Wooclap, Google Forms, or other online resources) to provide students with the ability to take assessments to support passive study and encourage

interaction during lessons. The use of self-assessment tools to monitor their level of understanding of the content is encouraged.

Teachers offer teaching materials tailored to the specific needs of each individual course and may include textbooks, slides, handouts, selected scientific articles, guided exercises and, in many cases, lesson recordings available on dedicated platforms (mainly on the WeBeep channel for the specific course).

This variety of teaching methods is aimed at promoting solid, autonomous and interdisciplinary training, in line with the needs of the biomedical sector and the world of research and industry.

TEACHING MIX TABLE (referring to the 2024/2025 academic year)

	DT	DI	DL	DP	DV
Year 1 – Semester 1	100%	56%	44%	28%	28%
Year 1 – Semester 2	100%	45%	27%	27%	9%
Year 2 – Semester 1	100%	53%	76%	59%	29%
Year 2 – Semester 2	100%	33%	58%	67%	25%



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.

Throughout the program, students will experience different assessment methods. In the Study Program, no course will be assessed through two ongoing partial exams. Assessment methods generally include a written exam, oral exams, or a combination of both. In particular, some courses, especially those with a strong laboratory component, include optional oral exams to improve the final grade. In some courses, assessment methods may include oral presentations, group work, technical reports, or individual or group written papers on projects proposed during the semester by the course instructor. These methods are introduced in both the first and second years as optional exams and become mandatory in some courses.

The use of assessment methods that take into account both the ability to apply theoretical knowledge to concrete problems and problem-solving, communication and teamwork skills is encouraged.

The following table shows the indicative percentages of the forms of assessment of student learning through the different exam methods: written and oral, mandatory or optional for the courses offered in the various semesters of the Study Program.

TABLE OF ASSESSMENT METHODS (referring to the 2024/2025 academic year)

	Written exam	Mandatory oral exam	Optional oral exam	Mandatory project	Optional project
Year 1 – Semester 1	94%	22%	39%	17%	11%
Year 1 – Semester 2	82%	27%	18%	45%	9%
Year 2 – Semester 1	41%	71%	6%	14%	6%
Year 2 – Semester 2	50%	67%	8%	50%	8%

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 of a design and experimental activity that engages the student in addressing an advanced research topic in biomedical engineering. During this activity, students are required to put into practice the knowledge acquired in the various courses of the Study Program, integrating theoretical and operational skills.

The thesis activity involves the application of methodologies, such as the design, construction, analysis, and modeling of devices, instruments, and biological data, with the aim of solving concrete problems or exploring new technological or applicative solutions in the biomedical field. The final exam may therefore concern the development of an innovative device, the optimization of existing technologies, the modeling of complex biological phenomena, or the advanced analysis of experimental data.

At the end of the design and experimental activities, the results obtained flow into the drafting and discussion of the final thesis, which represents a fundamental moment of synthesis of the theoretical knowledge, application skills, and design and research autonomy developed by the student during the two years of the program.



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](#).

There are no specific tutoring opportunities for students within the study program. Tutoring is provided only for some first-year courses. Tutoring is provided by doctoral and postdoctoral students who have acquired specific expertise in specific topics.

Instructors offer office hours by appointment for individual in-depth discussions. Additionally, some courses include the use of interactive platforms to allow students to independently test their learning level and receive immediate feedback.

By the time students reach their first year of a Master's degree, they have acquired the skills needed to independently manage their study time. This goal is easily achieved if they establish a routine and commit to sticking to it daily, until it becomes deeply ingrained in their behavior.



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](#).

Students have the opportunity to participate in extracurricular activities during the two-year Study Program. Specifically, Politecnico di Milano offers "Passion in Action" courses on transversal or specific topics, such as those in Biomedical Engineering. Students participating in these initiatives will have the opportunity to develop transversal, soft, and social skills. Recognition of acquired skills is provided through mention in the Diploma Supplement. Passion

in Action initiatives in which the program participates are advertised on the WeBeep channel of the Biomedical Engineering Study Program.

Students who meet the required requirements can access the Alta Scuola Politecnica (ASP), which allows students to undertake an interdisciplinary project program between Politecnico di Milano and Politecnico di Torino.

Among other extracurricular activities, there are also orientation events organized by the University Career Service.

The University has several student associations whose representatives, elected by students, serve on various University bodies. Within the Biomedical Engineering study program, student representatives play an important and active role, proposing specific activities for students and liaising with the program coordinator. Furthermore, student representatives are a point of contact for new students, offering support and information both via email and at meetings dedicated to the Biomedical Engineering study program, such as the Open Day.

Since 2017, the Biomedical Engineering Association (BEA) has been present; this student association organizes events for Biomedical Engineering students. BEA promotes activities that allow students to understand potential career opportunities after completing their bachelor and master study programs, including visits to biomedical companies.



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.

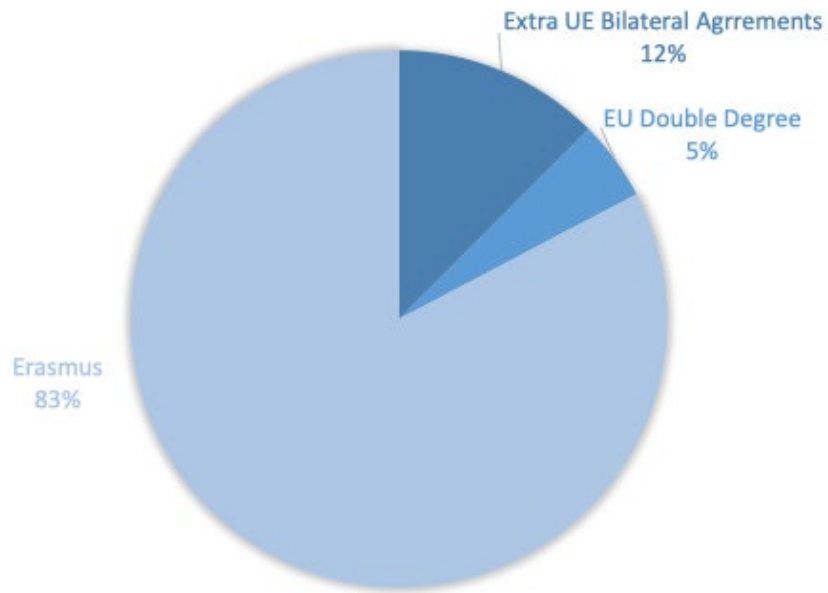
Similarly to the institutional mobility organized by Politecnico di Milano, *Free Mover* mobility is not permitted during the first semester of the Master's degree. However, students may submit their application during their first semester for mobility periods in subsequent semesters.

Students enrolled and attending the Study Program in Biomedical Engineering can access international exchange programs. This gives students the opportunity to spend a semester or an entire academic year at another foreign university that offers courses equivalent to those offered in the Bachelor's Study program. As shown in the figure, students prefer Erasmus for a semester, but also the opportunity to gain experience in countries outside Europe (e.g., Mexico, the United States, Canada), through numerous international exchange agreements with over 60 foreign universities.

The Master's Degree program also offers international double degree programs, such as the one with the University of Illinois Chicago (Chicago, Illinois, USA). Finally, some students pursue a Double Degree program abroad; in this case, the Study Program lasts three years, rather than



two, and upon completion of their studies, they also obtain a bachelor's degree from the foreign university where they completed part of their Master's degree.



The graph shows the percentages of outgoing students expected for the 2024/25 academic year in the programs in which students of the Study Program in Biomedical Engineering can enroll.

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.



During the study program in Biomechanics and Biomaterials, Engineering for Biotechnology, Cells and Tissues, Electronic Technologies, and Information Engineering, there is no mandatory curricular internship. However, students have the opportunity to undertake a training experience at another university, research center, or company, both Italian and international, as part of mobility programs (Free Movers) or bilateral agreements (e.g., Erasmus), in order to develop experimental activities relevant to their thesis. The research experience, carried out under the dual supervision of an internal supervisor and an external advisor, offers students the opportunity to apply the skills acquired during the program in an advanced research context, contributing to the development of innovative solutions in the field of biomedical engineering. The internship may involve the entire experimental activity required for completion of the thesis, or only a portion of it, depending on project and organizational needs. The activity must be consistent with the educational objectives of the PSPA and the Study Program, and closely related to the identified research topic. The supervisor will have previously discussed the research topic, the scientific objectives to be pursued, the operational methods, and the expected timeframe with the student and the external supervisor at the host institution. This timeframe must be consistent with the workload associated with the 17 credits assigned to the final exam in the degree program.

For the PSPA in Clinical Engineering, a mandatory curricular internship is required in the second semester of the second year of the Study Program. The mandatory curricular internship aims to provide students with hands-on training, integrating the theoretical knowledge acquired during their academic career with the practical skills needed to work in a clinical and hospital setting. The mandatory curricular internship requires a commitment of at least 150 hours (equivalent to 6 ECTS) and can take place at hospitals, healthcare organizations, hospital companies, clinical research institutes, or companies operating in the biomedical sector. Each internship includes a company supervisor and an academic supervisor, who guide and supervise the student's training.

How can I express my opinion?

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

OPIS Questionnaire

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

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

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

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

Graduating Students' Questionnaire

During the final year of the Study Program, students are also required to give their opinion on the entire educational path. Completing the questionnaire is mandatory in order to register for the Bachelor's/Master's Degree graduation session (Graduating Students' Questionnaire). In this survey, students are asked to provide feedback on several aspects, including the organization of teaching, specific course content, facilities, internships, international mobility opportunities, and the final examination.

Student Services Satisfaction Questionnaire

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



How can I contribute?

Role of Student Representatives

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

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

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

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

Each **Study Program** has a certain number of student representatives (the number varies depending on the number of enrolled students). Student representatives are full members of the **Study Program Council**, the body responsible for defining the Degree Program and Educational Rules for each Study Program. In this context, student representatives contribute to defining how teaching is delivered, analyzing the effectiveness of courses, organizing the study plan, and acting as spokespersons for their fellow students by reporting any issues related to teaching.

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

Work with Us as a Tutor

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



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

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

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

What's next?

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

Among the services offered by the Career Service:

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

The Politecnico di Milano, through its Career Service, regularly organizes meetings with interested companies to create job opportunities (job fairs) for new graduates and, at the same time, align the educational objectives of its programs with the needs of the labor market. In collaboration with the Alumni Office, the Career Service has provided the programs with a career counseling service. During the past academic year, events specifically designed for students of the Biomedical Engineering study program were organized, including:

- Healthcare Career Experience: Meeting between students and company representatives from Boston Scientific, Livanova, Humanitas, Medacta, and Inpeco;
- Healthcare: Engineers and Innovative Projects: round table during which participating companies presented one or more innovation projects developed within their own company;



- Guess My Job: Discover Roles in the Healthcare Sector: During the online event, company representatives introduced themselves by describing their work, without revealing their roles; students were asked to try to identify their job titles.

Between January and December 2024, Biomedical Engineering students also actively participated in numerous initiatives proposed by the Career Service, as shown in the following table.

ASSESSMENT CENTER SERVICES AND ORIENTATION WITH COMPANIES

	# participating students (Biomedical Engineering)
Single students who have used the individual counseling service	145
Students who have earned the "Career Service Award" digital badge	53
Participation in the project "Am I an ... Innovator?"	37
Participation in the "Try an Assessment" activity - a simulated group interview with a company	60
Participation in career guidance events with companies (Master's Degree only)	396



Contacts

Course Coordinator of the Study Programme: Prof. Silvia Farè

Study Plans: Prof. Elena De Momi

Admissions: Prof. Silvia Farè

Graduation/Final Exam: Prof. Manuela Galli

Transfers and programme changes: Prof. Emiliano Votta

International Mobility: Prof. Emiliano Votta (coordinator) – Asia (South Korea, Japan, India, Israel, Lebanon, China, Singapore), Australia, Eastern Europe (Bulgaria, Russia, Poland, Romania, Slovakia, Hungary, Slovenia, Czech Republic), Northern and Central Europe (Germany, Switzerland, Belgium, Netherlands); Prof. Elena Bianchi – Central Europe (UK, France, Sweden (MZ), Norway (MZ)); Prof. Nina Bono – Northern Europe (Denmark, Sweden (AL), Norway (AL), Finland, Latvia, Estonia, Lithuania); Prof. Veronica Cimolin – Canada, Central America, South America; Prof. Alessandro Pellegata – Southern Europe (Portugal (MZ), Spain (MZ)); Prof. Chiara Veneroni – Southern Europe (Portugal (AL), Spain (AL), Turkey, Greece, Malta, Cyprus, Serbia, Croatia); Prof. Enrico Caiati – United States, Double Degree Programs in non-European locations, Global E3 Program; Prof. Jose Felix Rodriguez Matas – Double Degree Programs in European Locations, UniTech Program, Idea League Program

Orientation: Prof. Veronica Cimolin

Internships: Prof. Anna Maria Bianchi

Student Representatives: rappresentativestudenti-ccsbiomedica@polimi.it

Teaching Secretariat: Raffaella Gatti, Natascia Passaro (didattica-deib@polimi.it)

Useful links

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

Website of the [Biomedical Engineering](#) Study Programme

WeBeeP Channel of [the Biomedical Engineering Course](#)

Student Office: [Online counter](#)

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