



**Politecnico
di Torino**

ACADEMIC REGULATIONS
Bachelor's degree programme
in
MATERIALS ENGINEERING

Department of Applied Science and Technology
Collegio di Ingegneria Chimica e dei Materiali

Academic Year **2025/2026**

*The English translation of this document is provided as a support to the student community and has no legal effects.
The Italian version shall constitute the sole authentic text and will be referred to for any legal matter.*

SUMMARY

Art. 1 - Specific learning objectives and career prospects	3
1.1 Specific Learning Objectives	3
1.2 Career prospects	3
Art. 2 - Admission requirements	5
Art. 3 - Programme curriculum	6
3.1 Programme overview	6
3.2 Organization of educational activities	6
Art. 4 - Student career	7
Art. 5 – Final Examination	8
Art. 6 - References	10
6.1 Student Regulations	10
6.2 Other Regulations	10

Art. 1 - Specific learning objectives and career prospects

1.1 Specific Learning Objectives

The educational objectives of the Bachelor's degree programme are:

- to provide students with a solid grounding in basic disciplines such as mathematics, physics, and chemistry;
- to provide them with a solid grounding in industrial engineering disciplines such as mechanical engineering, mechanical drawing, and electrical engineering;
- to develop specific knowledge of materials (metallic, ceramic, and polymeric) and of their manufacturing and processing methods;
- to build the competencies needed to understand the relationships between the atomic structure and microstructure of materials and their properties (mechanical, thermal, electrical, etc.);
- to develop an understanding of how scientific instruments for the basic characterization of materials (optical and electron microscopy, mechanical testing, etc.) work, across different classes of materials, and of the relevant testing methodologies.

1.2 Career prospects

The Bachelor's degree programme aims to train a variety of professional profiles. The career prospects and main functions and competencies associated to each profile are illustrated below.

Professional Profile	Main functions and competencies
<p>Materials Engineer</p>	<p>Materials Engineer</p> <p>The Materials Engineer is a professional capable of contributing to the management of industrial plants for the production of materials to be transformed into finished products, as well as to the design of industrial products and their production processes. In particular, they provide specific expertise in selecting the most suitable materials, technologies, and process parameters for the intended application.</p> <p>Functions:</p> <p>The main functions include:</p> <ul style="list-style-type: none"> • contributing to the management of production processes in material manufacturing plants, heat treatment facilities, and plants for semifinished and finished products; • contributing to the management of laboratories carrying out the characterization of the physical, mechanical, and structural properties of materials; • contributing to the selection of materials in the context of product design and innovation activities; • contributing to the development of innovative industrial technologies for material processing; • contributing to technical and commercial support in the supply of scientific instruments for material characterization. <p>Competencies:</p> <p>Graduates in Materials Engineering:</p> <ul style="list-style-type: none"> • have a solid background in industrial engineering; • have competencies in Materials Science and Technology, with particular focus on the main classes of traditional materials (metallic, polymeric, and ceramic) and their production processes; • have competencies in the characterization of the physical, mechanical, and structural properties of materials;

	<ul style="list-style-type: none"> • have competencies that enable them to make informed choices of materials and technologies for each specific project and application. <p>Potential employers:</p> <p>This professional profile can find employment mainly in the public and private industrial sectors (manufacturing, energy, etc.), in the production and processing of metallic, polymeric, ceramic, glassy, and composite materials, in industrial laboratories, and in research and development centres of private companies and public institutions.</p> <p>Graduates in Materials Engineering, after passing the State Examination, may qualify as Engineers – Section B and register as Junior Industrial Engineers in the professional register. The knowledge and skills acquired in the Bachelor's degree programme in Materials Engineering also enable graduates to continue their studies in second-cycle Master's degree programmes.</p>
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1.3 Professional profiles (ISTAT codes)

With reference to the list of professional profiles classified by ISTAT (Italian National Institute of Statistics, <https://www.istat.it/en/>), a graduate from this Bachelor's degree programme can work as:

ISTAT code	Description
3.1.5.3.0	Tecnici della produzione manifatturiera

Art. 2 - Admission requirements

To be admitted to this Bachelor's degree programme, applicants must hold a high school diploma (as required by current regulations) or an equivalent qualification obtained abroad, recognized as valid. Additionally, they must have or attain an appropriate level of initial background knowledge.

The number of admissible students is determined annually by the Governing Bodies of Politecnico based on locally programmed admissions, considering the available facilities and the student-to-faculty ratio.

The number of available places and admission procedures are specified in the official Call for applications for admissions published at <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/bachelor-s-degree-programmes/calls-for-application-regulations-and-ranking-lists>.

In particular, for enrolment in this Bachelor's degree programme, applicants must take an admission test (TIL-I), administered in different sessions according to a specific calendar published on the recruitment web pages.

The test is conducted using the technical equipment available in the computer laboratories of the University.

The minimum score required to be included in the ranking list is set at 30% of the total score. Applicants may take the TIL-I test up to a maximum of three times. In the event of multiple attempts, the highest score obtained by the applicant will be considered valid. The test consists of answering 42 questions in 1 hour and 30 minutes. These questions are divided into four sections covering four different subject areas: Mathematics, Reading Comprehension and Logical Reasoning, Physics, and Basic Technical Knowledge.

Applicants who score below 30% in the Mathematics section will have to fulfil some supplementary academic obligations (in Italian, Obblighi Formativi Aggiuntivi - OFA).

They will be invited to attend tutoring math classes during Year 1 and they must attend a supplementary course. This course, called C.I.A.O. - Corso Interattivo di Accompagnamento Online (Interactive Online Support Course), is normally offered in the week before the beginning of classes. It seeks to help applicants fill in the gaps in their Math knowledge through specific online tutoring sessions.

The OFA requirements will be considered fulfilled if, by the end of Year 1, at least one of the following conditions is met:

- students pass one of the two Mathematics exams of Year 1 (Mathematical Analysis I or Linear Algebra and Geometry);
- students pass the final test of the CIAO course by correctly answering at least 10 out of 15 questions. This test will be offered three times during the academic year.

Any exemptions from taking the admission test are specified in the Call for applications for admissions to the Bachelor's degree programmes of Politecnico di Torino.

Students with a non-Italian educational qualification who intend to enrol in the programme, which is delivered entirely in Italian, must hold, at the time of enrolment, a certificate of Italian language proficiency at level B2, as defined by the Common European Framework of Reference for Languages (CEFR).

For more information regarding the Call for applications, the number of admissions, the admission test registration and enrolment procedures, please visit <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/bachelor-s-degree-programmes/calls-for-application-regulations-and-ranking-lists>.

Art. 3 - Programme curriculum

3.1 Programme overview

The Bachelor's degree programme in Materials Engineering requires the acquisition of 180 ECTS credits and has a duration of three years.

The first year includes basic scientific courses (Chemistry, Physics, and Mathematics), the development of IT and language skills, and an introductory course on Materials Science and Technology.

The second year focuses on strengthening scientific knowledge (through courses in Organic Chemistry, Physics, and Mathematics) and introduces engineering courses that form the common background of all Industrial Engineers (Thermodynamics for Materials Engineering, Machine Mechanics, Electrical Engineering/Electric Machines).

The third year completes the fundamental engineering training (Structural Mechanics and Fundamentals of Machines) and provides an in-depth study of the physical properties of materials (Structure of Matter), of the main families of materials (Metallic, Polymeric, and Ceramic Materials), and of their production and processing technologies.

In this way, students, while maintaining a broad understanding of different industrial engineering fields, gradually specialize in the various classes of materials. The third-year curriculum also includes laboratory courses, where students, through a *learning by doing* approach, can learn to use the main techniques for material characterization, as well as develop teamwork skills and communication abilities (soft skills).

The program also offers the opportunity to earn credits by completing an internship in one of the many companies that host students of the Degree Program. These internships are focused on real industrial challenges and allow students, even before graduation, to experience the professional environment and the practical dynamics of teamwork, problem-solving, project analysis, and economic evaluation.

3.2 Organization of educational activities

The list of courses (compulsory and optional), curricula, possible organization of courses into modules, any pre-requisites and exclusions and the list of the faculty members responsible for the courses are available at:
https://didattica.polito.it/pls/portal30/sviluppo.offerta_formativa_2019.vis?p_a_acc=2026&p_sdu=32&p_cds=485

The list of the Scientific Disciplinary Fields (Settori Scientifico Disciplinari) for each activity (specific subjects and complementary subjects) is available at:
https://didattica.polito.it/pls/portal30/sviluppo.vis_aig_2023.visualizza?sducds=32485&tab=0&p_a_acc=2026

Art. 4 - Student career

The Student Guide is published on the Teaching Portal every year before the beginning of the academic year. There is a specific Student Guide for each Bachelor's degree programme. The Student Guide is available on the [web site](#) of the degree programme.

It contains information and deadlines on:

- academic calendar;
- supplementary academic obligations (Obblighi Formativi Aggiuntivi - OFA);
- Personal Study Plan and Annual Personal Study Plan;
- free choice credits;
- internships;
- tuition fees;
- dual career;
- classes and exams;
- class delivery;
- foreign language learning;
- studying abroad/mobility programmes;
- exam rules;
- transfers in/out and internal transfers;
- interruption, suspension, withdrawal, forfeiture;
- credit transfer.

Art. 5 – Final Examination

The final examination is an individual learning opportunity that completes the degree programme. It consists of an in-depth study of one of the topics related to Materials Engineering addressed during the Bachelor's degree programme and the preparation of a short original scientific presentation making use of multimedia tools (Final Project).

If the student has carried out an internship or taken part in a student project on a subject relevant to Materials Engineering, the scientific presentation may be based on this experience.

The final examination is worth 3 ECTS credits, corresponding to approximately 75 hours of student workload.

The purpose of the examination is to verify that the student is able to communicate science in a way that is understandable also to a non-specialist audience, to deepen topics covered in the degree programme through bibliographic research and/or the experience gained during the curricular internship, and to use effective communication methods. A list of indicative topics and communication tools will be made available to students.

Students must submit their request online through a dedicated procedure available on their personal page of the Teaching Portal, in the section "Graduation and Final Examination", respecting the deadlines for the relevant session as published in the Student Guide – Thematic Calendar section.

The student must select the topic of the short scientific presentation (original and prepared with the use of multimedia tools) from a list of themes previously defined by the lecturers of the Bachelor's degree programme or by the Department of Applied Science and Technology. It is also possible to agree on a topic directly with a lecturer, which will then be added to the list.

Once the work is completed, the student must obtain approval of the work carried out from the Supervisor of the final examination. This approval, together with the completion of all examinations and registration for the degree examination, will allow the student to participate in the relevant graduation session.

The student then presents his/her original work to a degree committee, appointed in accordance with the University Regulations. The duration of the presentation is defined by the committee.

The final grade is determined by the Graduation Examining Committee, which evaluates the overall average grade of the exams on a scale of 110 after having subtracted the 16 worst credits. This number is proportionally reduced if some of the exams have been validated without a grade (pass-or-fail exams) or in the event of credit transfer, since only the exams taken at Politecnico are taken into consideration for this calculation.

To this average, the committee may normally add up to 5 additional points, based on:

- the evaluation of the Final Project
- the number of years it took the student to complete his/her studies;
- the evaluation of the educational path partially or totally in English;
- other information about the student's course of study (for instance, the number of exams passed with honours, experience abroad, extracurricular activities etc.).

Students enrolled at Politecnico for the first time starting from a.y. 2022/2023 (and following aa.yy.) who pass their first-year courses and the core courses offered in Year 2 (Mathematical Analysis 2 and Physics 2) by the end of the examination session which immediately follows the semester of first course attendance will get a bonus (0.5 points for each exam) that will be added to the final grade, up to a maximum of 4 points.

Honours (*cum laude*) may be awarded upon achieving a score of 110, at the discretion of the committee and with a qualified majority, i.e., at least 2/3 of the committee members.

More Information and Deadlines:

- Student Regulations
- Student Guide

Diploma Supplement:

In compliance with article 11, paragraph 8, of Ministerial Decrees No. 509/1999 and 270/2004. Politecnico di Torino issues the Diploma Supplement, a document that can be attached to a higher education qualification. It is designed to improve the transparency of international qualifications, as it provides the description of the curriculum successfully completed by the student. This certificate follows the European model developed by the European Commission, the Council of Europe and UNESCO – CEPES: it is issued in two languages (Italian-English) and it is composed of approximately 10 pages.

More information at: <https://www.polito.it/en/education/applying-studying-graduating/academic-experience/certificates-and-other-documents>

Art. 6 - References

6.1 Student Regulations

The [Student Regulations](#) define the rights and responsibilities of students and set out the administrative and disciplinary rules that all students enrolled in a degree programme or in a single learning activity at Politecnico must abide by.

6.2 Other Regulations

Particular aspects of students' academic progress are governed by specific Regulations or Calls for Applications published on its website.

In particular:

- The [Tuition Fee Regulations](#) specify the annual tuition fees that students must pay. The procedure for requesting a tuition fee reduction is explained in a dedicated guide.
- The University Regulations on Funds for Student Mobility Abroad outline the principles and rules for awarding and disbursing mobility grants. Standard procedures apply to all types of mobility programmes with unified Calls for Applications published twice a year at <https://www.polito.it/en/education/applying-studying-graduating/studying-abroad>
- The [Code of Ethical Conduct](#) also applies to students.