



**Politecnico  
di Torino**

**Call for applications for the international major of the  
Master's degree programme in  
Physics of Complex Systems (Fisica dei sistemi complessi)**

**a.y. 2024-2025**

Available at: <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/studenti-con-titolo-italiano>



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## 1 Overview

Politecnico di Torino, based on the agreements signed in 2011 with Sorbonne Université, Université Paris- Saclay, Université Paris Cité, Scuola Internazionale Superiore di studi avanzati (SISSA) e The Abdus Salam International Centre for Theoretical Physics (ICTP), organizes an international Master's degree programme in Physics of Complex Systems (Fisica dei sistemi complessi).

The international major includes a first semester at SISSA/ICTP in Trieste, a second semester at Politecnico in Torino and a third semester at the Sorbonne Université, Université Paris-Saclay, Université Paris Cité. The fourth and last semester is dedicated to the thesis project. Further information is available at the following link:

<https://www.polito.it/en/education/master-s-degree-programmes/physics-of-complex-systems>

Considering the international approach of the educational path, Politecnico di Torino supports international mobility projects for all students enrolled in the international major of the Master's degree programme in Physics of Complex Systems (Fisica dei Sistemi Complessi) with an ERASMUS + scholarship integrated by other University funds. The scholarship is awarded to the students who meet the requirements illustrated in this Call for applications and actually take part in the mobility project at the partner university.

## 2 Number of places available and mobility scholarships

For academic year 2024/25 there are totally 20 places available. The following categories of applicants can apply for admission to the programme:

- o European Union applicants: Italian or European citizens
- o Equivalent applicants<sup>1</sup>
- o Non-EU applicants living abroad and requiring visa- within the limit of the quota reserved for them (no. 2 places).

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<sup>1</sup> Equivalent applicants are:

- applicants from Norway, Iceland, Lichtenstein, Switzerland and San Marino;
- non-EU nationals legally residing in Italy with a valid residence permit for study, work or family reasons;
- political refugees;
- staff members of Foreign Diplomatic Missions (Embassies/Consulates) and International Organizations based in Italy, legally accredited to the Italian
- Government or to the Holy See (including family members: spouse and children);
- non-EU nationals legally residing in Italy or diplomats who have an Italian high school diploma awarded in Italy or abroad



Each student admitted to the programme will receive a mobility scholarship that covers the additional expenses that the student incurs during his/her stay abroad compared to what he/she would spend in Italy. The amounts and payment methods are indicated in the art. 9.

### **3 Admissions**

For admission to the Master's degree programme in Physics of Complex Systems applicants must meet the requirements listed in article 4 (Requirements). They will be assessed based on the criteria listed in article 6.

Applicants who already have a Master's degree can apply to the programme, but –if admitted–, they will not be able to request the recognition of the credits earned during their previous Master's degree programme(no credit transfer).

### **4 Requirements**

#### **4.1 Applicants with an Italian bachelor's degree**

##### **4.1.1 Curricular Requirements**

The curricular requirements are:

- Bachelor's degree or university diploma obtained after a period of study of minimum 3 years;
- competencies and knowledge acquired by applicants during their previous academic path, expressed in credits (ECTS), as further below specified:
  - a minimum of 40 credits (ECTS) earned in the following Scientific Disciplinary Fields: CHIM/07, FIS/01, FIS/03, MAT/02, MAT/03, MAT/05
  - a minimum of 60 credits earned in the following Scientific Disciplinary Fields: CHIM/07, FIS/01, FIS/02, FIS/03, FIS/04, INF/01, ING-IND/31, ING-INF/01, ING-INF/02, ING-INF/05, ING-INF/07, MAT/06, MAT/07, MAT/08.

Each course can be linked to one or more Scientific Disciplinary Fields (SSD). The credits of the SSD found both in the first group and in the second group are primarily counted for the first group. The remaining ones are counted for the second group. The credits of the same subject can be counted partly to reach the minimum number of credits of the first group and partly to reach the minimum number of credits of the second group.

If you lack less than 10 credits the supervisor will consider if there are similarities among the Scientific Disciplinary Fields and provide guidance. If you lack more than 10 credits, the evaluation of the similarities will be subject to the final approval of the Coordinator or the Vice coordinator of the degree programme.



Applicants who have not earned their Bachelor's degree at the date of application submission are allowed to submit their application if they earn at least **100 ECTS** by **2<sup>nd</sup> March 2024**.

#### 4.1.2 Language requirements

Applicants must have an English language certificate (B2 level or above) according to the Common European Framework of Reference for Languages (CEFR). For the purposes of proving the B2 level, please consider the following table of certificates:

<https://didattica.polito.it/cla/en/certificates> and read the Student Guide. The table is the "Table adopted on 23/09/2019 updated on 22/12/2022".

Cases of exemption from presenting one of the English language certifications:

- IB Diploma (International Baccalaureate <https://www.ibo.org/programmes/diploma-programme/>) only in case the entire path is taught in English, except foreign languages;
- Educational qualifications awarded by the European schools included in the [Procedures for entry, residency and enrolment of international students and the respective recognition of qualifications, for higher education courses in Italy - Attachment 2](#), only if the first language (L1) is English;
- Non-Italian qualification recognized by the Italian Ministry of University and Research as equivalent to the Italian high school diploma (diploma di maturità), or university degree awarded by a school/university in which the medium of instruction is English and issued by USA, UK, Canada, Ireland, Australia and New Zealand, wherever the school/ university is located;
- Non-Italian qualification recognized by the Italian Ministry of University and Research as equivalent to the Italian high school diploma (diploma di maturità), or university degree awarded by a school/university in which the medium of instruction is English, only if based in one of the countries listed in [Attachment A](#).

#### 4.1.3 Assessment of academic performance

Applicants' average grade is assessed in accordance with the same rules that apply to admissions to all Engineering Master's degree programmes at Politecnico di Torino, as further below specified:

##### **Applicants from Politecnico di Torino**

Applications are open to Politecnico graduates who are in the following conditions:

- students who completed their Bachelor's degree programme in 4 years<sup>2</sup> or less, regardless of their average grade;
- students who completed their Bachelor's degree programme in more than 4 years but less than 5 years<sup>3</sup>, with a weighted average grade equal to or greater than 21/30
- students who completed their Bachelor's degree programme in more than 5 years, with a weighted average grade equal to or greater than 24/30

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<sup>2</sup> The last graduation session available to respect the average requirement is the December one.

<sup>3</sup> The weighted average is calculated as follows:  $\sum (\text{grade} \cdot \text{credits}) / \sum \text{credits}$ .



Following the resolutions of the Academic Senate, due to the COVID-19 health crisis, the academic years 2019/20 and 2021/22 will not be included in the calculation of the number of years it took you to graduate (time to graduation).

The weighted average grade is calculated on all accrued course credits (graded on a scale of 30) counting towards the achievement of the Bachelor's degree, after having subtracted the worst 28 credits (these 28 credits will not be subtracted in case of credit transfer).

The time to graduation is calculated based on the number of academic years you have been enrolled at the university, starting from your first enrolment in the Italian university system: for full-time students the time to graduation coincides with the number of academic years of enrolment; for part-time students every year of enrolment is counted as half year.

#### **Applicants from other universities**

Applicants from other universities must have a weighted average grade, after having subtracted the worst 28 credits, equal to or greater than 24/30, regardless of the number of years it took them to graduate.

#### **4.2 Applicants with a non-Italian Bachelor's degree**

Applicants with a non-Italian Bachelor's degree must have a Bachelor's degree (level 6 EQF) or an equivalent academic qualification (after at least 15 years of previous education: primary and secondary plus university) corresponding to the Italian qualification Laurea, awarded by an accredited foreign university and giving access to second-cycle courses (level EQF 7) within 29<sup>th</sup> July 2024 specified at the following link:

<https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/applicants-with-a-non-italian-qualification>

Applicants must also

- meet the curricular requirements of the Master's degree programme and have a suitable academic performance: the Academic Board will assess the quality of the applicant's academic performance and the consistency of his/her prior academic studies with the present programme.
- have an English language certificate - B2 level of the Common European Framework of Reference for Languages (CEFR)- that must be submitted while filling out the application on the Apply@polito platform as explained in article 5. The certificate must be included in the list of accepted certificates and scores:  
<https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/applicants-with-a-non-italian-qualification>

### **5 Application submission**

Starting from the publication of this Call, students interested in the international major of the Master's degree programme in Physics of Complex Systems can apply for admission on the Apply@polito platform.

The deadline for application submission is **5<sup>th</sup> June 2024 (23:59)**.



## 5.1 Applicants from other Italian Universities

To apply for admission to the programme, these applicants need to:

- have earned at least 100 ECTS by 2<sup>nd</sup> March 2024;
- fill in the online [application form](#). Applicants who have more than one Bachelor's degree must specify which degree they want to present for evaluation and admission to the programme;
- enter all the information on the Bachelor's exams (included incomplete exams) for a minimum of 180 credits in the Apply@polito platform – “Educational background” section;
- select the Master's degree programme in Physics of Complex Systems (international major) from the “Select your programme” section of the Apply@polito platform;
- enter the information on the English language certificate in the “Language skills” section (see 4.1.2)

To verify the language certificate:

- Applicants who have an **IELTS certificate** must:
  - enter the TRF Number, if no more than 3 years have passed since the date of obtaining certification;
  - enter the TRF number and attach the scan of the certificate issued by the institution, if more than 3 years have passed from the date the certification was obtained.

The TRF Number can be found on the certificate, or it can be found in the email notification of the publication of the results.

- Applicants who have a **Cambridge certificate** must log in to their Cambridge personal page and select the option that allows Cambridge to share their results with Politecnico di Torino (follow the instructions available at <https://support.cambridgeenglish.org/hc/en-gb/articles/360021664771-ending-your-results-to-a-recognising-organisation> ). Enter the Candidate's ID number – or – if this is not possible – upload the certificate or Statement of results.
- Applicants who have a **TOEFL certificate** must enter the code of Politecnico di Torino (C285) when they register for the exam. On the Apply@polito platform, it is necessary to indicate the Appointment Number. Those who do not indicate the Politecnico di Torino through the unique code must attach the scan of the certification for verification purposes

Applicants who have a different English certificate (included in the list of accepted certificates published on the CLA website) must upload a scanned copy of their certificate to the Apply@polito platform.

- submit the application from the “Save and submit” section. To submit the application it is not necessary to attach the syllabus.
- Pay an application fee of € 100 (this amount will be deducted from your tuition fees if you enrol in the programme, but will not be refunded under any circumstances if you do not enrol). Payment methods are the following:





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- a. Credit cards (or other payment methods available on the PagoPA platform) generating an immediate payment;
- b. Pre-printed notice of payment (MAV on the PagoPA platform), generating a deferred payment.

Applicants who pay using the method illustrated under letter b) must go back to the Apply@polito platform and enter the payment date in a specific field (self-declaration in compliance with art. 46 and 47 of DPR no. 445/2000). Failure to specify the payment date on the Apply@polito platform entails that the payment is not valid.

Both the payment and the self-declaration must take place before the deadline (**June 5<sup>th</sup>, 2024**).

Should the self-declaration be found to be false or incorrect, the first phase of online enrolment will be cancelled and the applicant will lose the right to compete in the selection process.

## 5.2 Applicants from Politecnico di Torino

To apply for admission to the programme, these applicants need to:

- log in to the Apply@polito platform from their personal page of the Teaching Portal. Applicants who have more than one Bachelor's degree must specify which degree they want to present for evaluation and admission to the programme;
- select the Master's degree programme in Nanotechnologies for ICTs from the "Select your programme" section;
- enter in the 'Language skills' section the language certification, if missing.  
N.B. A passing grade in the English language exam organized by the University Language Centre in academic year 2019/20 during the Covid-19 emergency (registered under your personal information as LANGUAGE DECLARATION FOR COVID-19) DOES NOT qualify you for admission to the Master's degree programme in Nanotechnologies for ICTs.
- Submit the application form the "Save and submit section".

## 5.3 Applicants with a non-Italian Bachelor's degree

To submit the application, it is necessary to follow the instructions available on the webpage <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/applicants-with-a-non-italian-qualification> attaching the indicated documentation and ensuring that the application is sent after making the relevant payment.

## 6 Evaluation criteria

Applicants who meet the requirements referred to in point 4 will be evaluated considering:

- the academic performance achieved during their university studies (exam grades);





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- the result of an interview.

## 6.1 Academic performance

### **Applicants with an Italian Bachelor's degree**

Applicants can be assigned up to a maximum of 60 points for their academic achievements.

Applicants with the highest weighted average grade on 2<sup>nd</sup> March 2024 are assigned up to 60 points, while applicants with lower average grades are assigned proportional lower scores.

For the purpose of this calculation, Politecnico considers also the courses recognized from previous academic paths. Courses that students have advanced from their Master's degree programme are not considered in this calculation.

### **Applicants with a non-Italian Bachelor's degree**

The Academic Board evaluates the academic performance of applicants with a non-Italian Bachelor's degree. The Board verifies if these applicants meet the curricular requirements and have a proper academic performance for admission to the Master's degree programmes of Politecnico di Torino. The score will be calculated using parameterization criteria (maximum 60 points).

## 6.2 Interview

Applicants can be assigned up to a maximum of 40 points for their performance in an oral interview. The interview will focus on the topics of previous studies with particular reference to the courses belonging the Scientific Disciplinary Fields of Physics and Mathematics. Applicants are considered eligible for admission to the programme and are included in the merit-ranking list if they get a score equal to or greater than 24 points in the oral interview.

The oral interview for EU and equivalent candidates who meet the admission requirements referred to in article 4 will take place between **17<sup>th</sup> and 19<sup>th</sup> June 2024**. The interview will be conducted online. Applicants will receive the invitation by e-mail.

## 7 Publication of the ranking list

The overall score is expressed on a scale of 100 points. Based on the results of the selection process, Politecnico will draw up two separate ranking lists: one ranking list for Italian, EU and equivalent applicants and one ranking list for quota applicants. Student places are assigned in compliance with the provisions referred to article 2. The ranking list will be published on the [General Notice Board of Masters Degree courses](#), in the news on the site dedicated to candidates with foreign degrees <https://www.polito.it/en/education/international-students/prospective-students> and in the



section [Education > Applying, studying, graduating> Admissions and Enrolment > Master's Degree programmes](#)

The ranking lists classify the applicants in the following categories:

**ADMITTED:** an applicant who is admitted to the programme and can enrol online, as he/she meets all the admission requirements.

**ELIGIBLE:** an applicant who qualifies for admission but is not offered a place in the programme because he/she is not in the top 20 positions of the ranking list. He/she may be offered a place if some admitted students fail to enrol in the programme.

**NOT ADMITTED:** an applicant who has scored less than 24/40 in the oral interview (minimum admission score).

**Admitted and eligible applicants must confirm their intention to enrol in the programme** by sending a ticket from the Ticketing Support System (by selecting the topic "Admission to Master's degree programmes) before the deadlines that will be published together with the ranking list. **Failure to do so entails permanent exclusion from the programme.**

If all the applicants included in one of the two rankings have been offered a place in the programme, vacant places will be assigned by drawing to the applicants included in the other ranking list.

After receiving the above-mentioned confirmations, Politecnico di Torino will publish the final ranking list with the names of the students who are admitted to the programme. These students must reserve their place by paying the first instalment of their tuition fees before the deadline that will be announced at a later date. The amount of the first instalment is a standard amount (161 euros), except for any reductions or revisions, as indicated in the Tuition Fee Guide for a.y. 2024/25, which is going to be approved by the University bodies at a later date. The amount paid will be deducted by the overall amount of the tuition fees upon enrolment but cannot be refunded under any circumstances. Applicants from other universities who have already paid 100€ for the submission of their application form must pay the difference between the first instalment of their tuition fees and the application submission fee.

Payment methods are the following:

- a) Credit cards (or other payment methods available on the PagoPA platform) generating an immediate payment;
- b) Pre-printed notice of payment (MAV on the PagoPA platform), generating a deferred payment.

Applicants who pay using the method illustrated under letter b) must go back to the Apply@polito platform and enter the payment date in a specific field (self-declaration in compliance with art. 46 and 47 of DPR no. 445/2000). Failure to specify the payment date on the Apply@polito platform entails that the payment is not valid. Both the payment and the self-declaration must take place within the deadlines.

Should the self-declaration be found to be false or incorrect, this phase will be annulled, and all rights to enrollment for the academic year 2024/25 will be lost.



## 8 Enrolment process

To complete the enrolment process, applicants need to click on “Procedi con l’immatricolazione/Enrol” from the “Evaluations” section of the Apply platform.

At the end of the payment phase, the system will show the student ID number and password to log in to the personal page.

### 8.1 Applicants with an Italian Bachelor’s degree

All applicants with an Italian Bachelor’s degree must enroll by:

- **30<sup>th</sup> November 2024**: enrolment deadline for applicants from Politecnico di Torino who graduate by October 2024, and applicants from other Italian Universities;
- **28<sup>th</sup> March 2025**: enrolment deadline for applicants from Politecnico di Torino who have advanced their Master’s courses and graduate by March 2024.

In addition to the procedure mentioned in point 8, applicants from other Italian Universities must complete the enrolment process with the identification and verification of their personal data.

These applicants will see the status “*enrolment to be completed*” on their personal page of the Teaching Portal. These students must complete the identification phase and verification of personal information. To this end, they must come in person to the University Registrar and Tuition Fees Unit bringing the same identification document used to register to the Apply@polito platform.

Until the conclusion of the identification phase, these students will have limited access to the services available on their personal page of the Teaching Portal (i.e. they cannot request enrolment certificates nor register for any exam etc.).

After being identified by the University Registrar and Tuition Fees Unit, the status “*enrolment to be completed*” visible on the student’s personal page will be removed.

The deadline to complete the identification and verification of personal information is **20<sup>th</sup> December 2024**. Failure to comply with this deadline entails permanent exclusion from the enrolment process

### 8.2 Special instructions for students with a non-Italian Bachelor’s degree

In addition to the procedure described in point 8, those who hold a foreign degree must follow the instructions published in the Enrollment section on the page: <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/bachelor-s-degree-programmes/students-with-a-non-italian-qualification>

Enrollment, under penalty of exclusion from the enrollment procedure, must be completed by **27<sup>th</sup> September 2024**.

In order to complete the enrolment process, Politecnico needs to verify that the students meet the enrolment requirements and have the necessary academic documents. For this



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reason, students must upload their academic documents required for admission to the programme by **27<sup>th</sup> September 2024**. The documents will be checked before 11<sup>th</sup> November 2024. Practical details will be published at: <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/bachelor-s-degreeprogrammes/students-with-a-non-italian-qualification>

Failure to submit the documents by the deadline entails permanent cancellation of the enrolment with immediate effect on prior academic progress.

Until Politecnico completes this verification, these students are enrolled with condition. Enrolment with condition is shown on the student's personal page of the Teaching Portal – "Online Services" tab – "IMPORTANT REMARKS" field. During this period, students have limited access to the services available on their personal page of the Teaching Portal (for instance, they cannot request enrolment certificates, they cannot register for an exam etc.). If the verification process reveals that a student does not meet one or more admission requirements (as stated in the Call for applications), his/her enrolment will be cancelled with immediate effect on prior academic progress.

## **9 Mobility scholarships**

Mobility scholarships are offered to all students who are admitted to the Master's degree programme in Physics of Complex Systems (international major), provided that they complete the enrolment process by **11<sup>th</sup> April 2025** (for students with an Italian Bachelor's degree) and by **27<sup>th</sup> September 2024** (for students with a non-Italian Bachelor's degree).

After 11<sup>th</sup> April 2025, the students who have taken part in a mobility project to SISSA/ICPT will be informed about the terms of disbursement of the scholarship. The scholarship amounts to 2000 Euro (subject to further taxation) and will be paid exclusively to the students who have completed the mobility project.

Regarding the mobility project for a.y. 2025/26 at Sorbonne Université, Université Paris-Saclay, Université Paris Cité, selected students must sign a mobility contract following the instructions that they will receive through the ticketing service. By signing the mobility contract, students undertake to accept the scholarship and its terms of payment and authorize Politecnico to start the administrative procedures for the scholarship disbursement.

The monthly amount of the scholarship consists of a share made available by the European Commission from the ERASMUS+ programme and a possible further share covered by other sources of funding (including the University's own funds).

The assessment of the possibility of supplementing the EU share with ministerial or own resources lies with the governing bodies, which also determine the amount from year to year. Therefore, the final value of the monthly amount of the scholarships to support mobility to France will be announced by a specific Executive Decision and will be indicated in the contract to be signed before departure.



The maximum amount of the mobility grant will be calculated on a monthly basis on the terms scheduled for the stay at the host university; the actual amount due will be calculated at the end of the mobility on a daily basis, covering only the period spent on-site at the partner university's location and in compliance with the procedures defined by the University in line with EU rules as described in the mobility contract.

## 10 Exclusions

Applicants included in the following categories will lose the right to be admitted to the Master's degree programme in Physics of Complex Systems (international major) and to receive the scholarship:

- o Politecnico students who do not have the requirements to advance the courses belonging to their Master's degree programme by the end of the September 2024 examination sessions;
- o students with an Italian Bachelor's degree who do not graduate and do not obtain the English language certificate by **30<sup>th</sup> November 2024**;
- o Politecnico students who do not graduate by the end of the March/April 2025 graduation period;
- o Politecnico students which do graduate by the end of the March/April 2025 graduation period, but do not complete the enrolment process by **28<sup>th</sup> March 2025**;
- o students from other Italian Universities who do not complete the enrolment process by **11<sup>th</sup> April 2025**;
- o students with a non-Italian Bachelor's degree who:
  - o do not have the required language certificate when they apply online on the Apply@polito platform <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/applicants-with-a-non-italian-qualification>
  - o do not meet the specific requirements and do not present the documents listed at: <https://www.polito.it/en/education/applying-studying-graduating/admissions-and-enrolment/master-s-degree-programmes/applicants-with-a-non-italian-qualification> do not complete the enrolment process by 27<sup>th</sup> September 2024.

Applicants with an Italian Bachelor's degree who are not admitted to the international major of the Master's degree programme in Physics of Complex Systems can be considered for admission to the national major of the same Master's degree programme or for admission to other Master's degree programmes offered by Politecnico di Torino, provided that they reach the 140-credit threshold, as provided for by the general admission rules.

Students admitted to the international major who cannot go to France during their second year for the scheduled mobility period for justified reasons, can continue their studies in Physics of Complex Systems on the national major in Italy, losing the right to the mobility scholarship.



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## 11 Contacts

For further information about the programme curriculum, please contact:

Prof. Alfredo Braunstein

Tel. 011-0907332

e-mail [pcs@polito.it](mailto:pcs@polito.it)

For more information on application submission, please send your inquiries through the Ticketing Support System, available on your Apply@polito personal page, by selecting the topic "Admissions to Master's degree programmes" or "Admissions to Master's degree programmes – students with a foreign degree".

*DISCLAIMER: 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 matters.*