



Call for applications

For the international major of

The Master's degree programme in

Physics of Complex Systems

(Fisica dei sistemi complessi)

a.y. 2021-2022

(Annex no.1 to Rector's Decree no. 373 of 28/04/2021)

Available at:

https://didattica.polito.it/pls/portal30/sviluppo.bacheca.open_pdf?p_id=11223&q=.pdf



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1 Overview

Politecnico di Torino, based on the agreements undertaken starting from 2011 with the Pierre e Marie Curie University, Université de Paris, Paris Saclay University, Scuola Internazionale Superiore di studi avanzati (SISSA) e Abdus Salam International Centre for Theoretical Physics (ICTP), organizes an international Master's Degree Course in Physics of Complex Systems (*Fisica dei sistemi complessi*).

The international curriculum includes a first semester at SISSA/ICTP in Trieste, a second semester at Politecnico in Torino and a third semester at the Université de Paris Diderot (Paris 7) and Paris-sud (Paris 11) in Paris. The fourth and last semester is dedicated to the thesis activity.

Further information is available at the following link

https://didattica.polito.it/laurea_magistrale/pcs/en/welcome

Given the peculiar internationality of the training path, the University supports the mobility abroad of all students enrolled in the international path of the Master's Degree Course in Physics of Complex Systems (Fisica dei Sistemi Complessi) with a scholarship ERASMUS + study integrated with University funds, the assignment of which is subject to the constraints of this Call for applications.

2 Number of places available and mobility scholarships

For the academic year 2021/22 there is a total of 20 places available. Admissions are on a competitive basis among the following categories of applicants:

- European Union students: Italian or European citizens



- Equivalent students¹
- Quota students: non-EU nationals residing abroad (i.e. students who require a visa)- within the limit of the quota reserved for them (no. **2** places).

Each of the available places is associated with a mobility grant that covers the additional expenses that a student incurs during his stay abroad compared to what he would spend in Italy. The amounts and disbursement methods are indicated in the following art. 9.

3 Admissions

In order to be admitted to the Master's degree programme in Physics of Complex Systems applicants must meet the requirements listed in article 4 (Requirements) and they are assessed based on the criteria listed in article 6.

Students who already have a Master's Degree can apply to the call, but in case of admission, they will not be able to apply for the credits recognition from their previous career on the international path of the Master's Degree Course in Physics of Complex Systems.

¹ Equivalent students are :

- students 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 (Law no. 189/2002)



4 Requirements

4.1 Curricular requirements

The curricular requirements are:

- Bachelor's degree or university diploma obtained after a period of study of minimum 3 years;
- competences 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 core subjects: CHIM/07, FIS/01, FIS/03, MAT/02, MAT/03, MAT/05
 - a minimum of 60 credits earned in distinguishing and related subjects (*attività caratterizzanti ed affini*): 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 Field (SSD). Each Scientific Disciplinary Field can be associated either to core subjects or to distinguishing/related subjects. When a course provides credits that are valid for various Scientific Disciplinary Fields, it may be possible that some course credits are counted to reach the minimum threshold for core subjects, while the remaining credits are counted to reach the threshold required for distinguishing and related subjects.

If you reached the threshold in one field, but you lack less than 10 credits in the other field (core subjects or distinguishing /related subjects) the Teaching Committee 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 subjected to the final approval of the Coordinator or the Vice coordinator of the degree programme.



Students who are not yet in possession of their Bachelor's degree can submit their application if they have acquired at least 100 ECTS by **March 13, 2021**.

4.2 Language requirements

Applicants must have an English language certificate (B2 level) according to the Common European Framework of Reference for Languages (CEFR). For the purposes of attesting the level B2 in the English language, please consider the following table of certifications or exemptions with respect to possession of the **IELTS 5.5** certification <https://didattica.polito.it/cla/it/certificazioni> The reference table is the "Table adopted on 04/12/2017 updated on 23/12/2020 (transitional)".

4.3 Assessment of GPA

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 applicants from Politecnico di Torino who are in the following conditions:

- students who completed their Bachelor's degree programme in 4 years 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, 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 24/30².

² The last graduation session available to respect the average requirement is the December one.



Following the resolutions of the Academic Senate, due to the COVID-19 emergency, the academic years 2019/20 and 2021/22 will not be included in the counting years it took you to graduate for admission to the Master's Degree Programmes.

The weighted average grade³ 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 career credit recognition).

The duration of your university career is calculated based on the number of academic years you have been enrolled for, starting from your first enrolment in the Italian university system⁴: for full-time students the duration 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 equal to or greater than 24/30, regardless of the number of years it took them to graduate.

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

⁴ For credits acquired in other careers, the calculation of the duration of studies is carried out by comparing the credits recognized to the time spent in the career at the Politecnico di Torino.



4.3 Applicants with a non-Italian Bachelor's degree

In order to be eligible to apply, applicants need to meet entry requirements as explained at

https://international.polito.it/admission/prospective_students/master_of_science/2021_22/admission_requirements:

- hold a Bachelor's degree or equivalent academic qualification awarded by an accredited foreign university obtained after at least 15 years of previous education (primary and secondary plus university)
- meet the curricular and quality requirements of the Master's degree programme⁵ you want to apply for;
- have an English language certificate - B2 level of the Common European Framework of Reference for Languages (CEFR). The requirement is considered satisfied if you are in possession of one of the certifications with the relative minimum score listed at:
https://didattica.polito.it/inte/en/apply_msc_lang

5 Application submission

Starting from the publication of this call for applications, students interested in accessing the international path of the Master's Degree Course in Physics of Complex Systems can apply for admission by connecting to the Apply@polito platform.

⁵ An Academic Commission will verify the adequacy of personal preparation and consistency between the selected degree programs and the previous university career.



The deadline to submit the admission's request is:

- **May 31, 2021 for applicants with an Italian Bachelor's degree**
- **May 12, 2021 for applicants with a non-Italian Bachelor's degree**

5.1 Graduates/ Graduands from other universities

To apply to the programme:

- 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;
- Select the Master's Degree Course in Physics of Complex Systems (international major) from the "**Select your programme**" section;
- Enter the information on their English language certificate in the "Language skills" section. To verify the language certification:
 - Applicants who have an IELTS certificate must enter their TFR number. You can find this number on your certificate or in the message you received by e-mail when the results were published. In this case, it is not necessary to upload a copy of the certificate.
 - Applicants who have a Cambridge certificate must log in to their Cambridge personal page and select the option that allows Cambridge to share your results with Politecnico di Torino (follow the instructions available at <https://support.cambridgeenglish.org/hc/en-gb/articles/360021664771-Sending-your-results-to-a-recognising-organisation>). Enter their Candidate's ID number – or – if this is not possible – upload their certificate or Statement of results to the Apply@polito platform – "Attachments" section.



- Applicants who have a TOEFL certificate must enter the code of Politecnico di Torino (C285) when they register for the exam. Otherwise, they must upload a scanned copy of their TOEFL certificate to the Apply@polito platform – “Attachments” section.
- 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;
- 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). Payment methods are the following:
 - Credit cards (or other payment methods available on the PagoPA platform) generating an immediate payment;
 - Pre-printed notice of payment (MAV on the PagoPA platform), generating a deferred payment.

Applicants who pay using a deferred payment must go back to the Apply@polito platform and submit a self-declaration of the payment date certifying that the payment was made before the deadline and in Italian territory. This declaration must be submitted by the same deadline (May 31, 2021).

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

5.2 Graduates/Graduands from Politecnico di Torino

To apply to the programme:



- 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 Master's Degree Course in Physics of Complex Systems (international major) from the "Select your programme" section;
- Enter the language certification, if missing, in the section "Linguistic knowledge". N.B. passing the English language exam organized by the University Language Centre in the academic year 2019/20, aimed at assessing language preparation with respect to the CEFR level required for graduation, does not meet the requirement for access to the master's degree.
- Submit the application from the "Save and submit section".

5.3 Graduates/Graduands with a non-Italian Bachelor's degree

To apply to the programme:

- complete the online application form
https://didattica.polito.it/inte/en/apply_msc_step1
- attach the required documents
https://didattica.polito.it/inte/en/apply_msc_step1_docs

6 Evaluation criteria

Applicants in possession of the requirements referred to in point 4 will be evaluated taking into account:

- the merit achieved in the exams taken during the course of studies;
- the results of the interview.



6.1 Academic achievements

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 grade⁶ on **March 13, 2021** are assigned up to 60 points, while applicants with lower average grades are assigned proportional scores.

For the purpose of this calculation, Politecnico takes into account also the courses recognized from previous academic paths. Courses that students advanced from their Master's degree programme are not taken into account.

Applicants with a non-Italian Bachelor's degree

The Evaluation Committee evaluates the academic achievement of applicants with a non-Italian Bachelor's degree. The Committee verifies if these applicants meet the curricular and quality requirements (average grade) for access to a Master's degree programme of the Politecnico di Torino and through parameterization criteria will assign the score (maximum 60 points).

6.2 Interview

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

⁶ The weighted average is calculated as follows: $\sum (\text{grade} * \text{credits}) / \sum \text{credits}$



The oral exam for EU and equivalent candidates who meet the admission requirements referred to in article 4 will take place from **14th to 25th June**. The oral exam for quota students will take place on **May 20**. The interview will be held 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 evaluation, two different rankings will be drawn up: one referring to Italian, EU and equivalent candidates and one referring to quota candidates. Student places are assigned in compliance with the provisions referred to in article 2.

The ranking lists will be published on the General News Board of the Master's degree programmes in and in the News Board of Master's degree programmes:

https://didattica.polito.it/bacheca/area_ing2/

https://didattica.polito.it/lauree_magistrali/2020/en/home

The ranking list classifies the applicants in the following categories:

ADMITTED: refers to the applicants who are admitted to the programme and are actually offered a place in the programme.

ELIGIBLE: refers to the applicants who qualify for admission but are not offered a place because they are not in the top 20 positions of the ranking list. They may be offered a place if some admitted students do not enrol in the programme.

NOT ADMITTED: refers to the applicants who have not reached the minimum score for admission to the programme.

Admitted and eligible applicants must confirm their intention to enrol in the programme using the ticketing service (by selecting the topic Access to master's



degrees) in compliance with the deadlines that will be published together with the ranking list. **Failure to do so entails permanent exclusion from the programme.**

If the number of candidates present in one of the two rankings is completed, any vacant places will be assigned by drawing on the other ranking.

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 stage. The amount of the first instalment fee is a standard amount of 200 euros, except for any reductions or revisions thereof, as indicated in the Student Contribution Guide for the 2021/2022 academic year, 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 will not be refunded under any circumstances. Applicants from other universities who have already paid 100€ for the submission of their application 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 specify the payment date (with a self-declaration). Failure to do so entails that their payment is not valid. Should the self-declaration be found false or incorrect, the applicant will lose the right to enrol in the programme for a.y. 2021/2022.

8 Enrolment process

8.1 Applicants with an Italian Bachelor's degree

To proceed with enrolment, you need to click on the link "Procedi con l'immatricolazione/Enroll" from the "Evaluations" section in the Apply platform. At the end of the payment phase, the system will show you your student number, ID and password to access your personal page.

All applicants with an Italian Bachelor's degree must enrol by:

- **November 26, 2021:** enrollment for candidates from Politecnico di Torino who graduate by the October session and candidates from other Italian universities;
- **March 31, 2022:** enrollment for candidates from the Politecnico di Torino who have advanced their Master's courses and graduate by the March 2022 session.

Applicants from other Italian Universities must complete the enrolment process through a second phase – enrolment at the Office of the University Registrar. The system will inform you that your enrolment is not complete on your personal page of the Teaching Portal – Message: "Immatricolazione da completare". The second phase of the enrolment process consists of your identification and in the verification of your personal data, penalty the exclusion from the enrolment process.



The deadline to complete the enrolment is March 31, 2022. Please note that you will have limited access to the services available on your personal page of the Teaching Portal (e.g. you cannot request enrolment certificates and cannot register for any exam, etc.) until you complete the enrolment process.

How to make the identification and verification of personal data (enrolment to be completed)

The identification and verification of personal data must be carried out by booking an appointment with the Office of the University Registrar, during the enrolment procedure. The applicants must go there to in person. During this phase of the enrolment, process applicants will be identified and given their student card.

Only in the event that the University, due to the persistence of the Covid-19 pandemic emergency, arranges distance learning, an alternative channel will be activated to make the remote identification and verification of personal data: the booking procedure will be accessible from the personal page of the teaching portal.

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

The enrolment process has two phases and is considered completed upon conclusion of both phases. Failure to complete both phases entails the cancellation of enrolment.

- **First phase - online enrolment:** to proceed with enrolment, you need to click on **the link** "Procedi con l'immatricolazione/Enroll" from the



“Evaluations” section in the Apply platform, according to the procedure and deadlines set in art. 7 “Publication of the ranking list”.

- **Second phase – enrolment at the Incoming Mobility Office** (International Affairs Department) and at the Office of the University Registrar

Completing the payment phase does NOT mean that you have concluded the enrolment process. You still need to go through the second phase of the enrolment process. The second phase of the enrolment process consists of your identification and in the verification of your personal data, no later than **October 15, 2021**, penalty the exclusion from the enrolment process.

In the phase following the payment, the system will present to applicants with a non-Italian Bachelor’s degree a calendar from which to book an appointment to personally present themselves at **the Incoming Mobility Office – International Affairs Department**. Operational details will be posted on this page:

https://international.polito.it/it/ammissione/futuri_studenti/laurea_magistrale/2021_22/immatricolazione

Only in the event that the University, due to the persistence of the Covid-19 pandemic emergency, arranges distance learning, an alternative channel will be activated to make the remote identification and verification of personal data: the booking procedure will be accessible from the personal page of the teaching portal. This procedure also applies in the case of national or international provisions that limit mobility from the student’s country of residence to Politecnico.



Please note that you will have limited access to the services available on your personal page of the Teaching Portal (e.g. you cannot request enrolment certificates and cannot register for any exam, etc.) until you complete the enrolment process.

The University, in order to complete the enrolment, must verify that the students are in possession of the enrolment requirements and the related academic documents. To allow these checks to be carried out, the students must attach the study documentation and the language certification required for access to the course, by **October 15, 2021**. Operational details will be posted on this page:

https://international.polito.it/it/ammissione/futuri_studenti/laurea_magistrale/2021_22/immatricolazione

Failure to submit the documentation within this deadline entails in the cancellation of the enrolment with resolving effect on any career acts that have occurred.

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 **March 31, 2022** (for students with an Italian Bachelor's degree) and by **October 15, 2021** (for students with a non-Italian Bachelor's degree).

After that date, students who have carried out a mobility at SISSA or ICTP, will receive a specific communication regarding the methods of disbursement of the scholarship in support of the same. The maximum amount of the scholarship, subject to taxation to be paid by the recipient according to the tax legislation in force, is equal to 2000 Euro (400 Euro / MONTH).



Moreover, admitted students must sign a specific contract following the instructions sent by e-mail by the University. By signing this contract, every student confirms his/her participation in the mobility programme and accepts the scholarship and its terms of payment. Failure to stipulate this contract by the deadlines entails permanent renunciation of the scholarship.

The monthly scholarship for mobility to French partners will be the following:

ISEE/ISEEU	TOTAL MONTHLY SCHOLARSHIP AMOUNT FOR MOBILITY TO FRENCH PARTNERS	
	<i>Net amount</i>	
ISEE/ISEEU \leq 13.000	€	800,00
13.000 < ISEE/ISEEU \leq 21.000	€	750,00
21.000 < ISEE/ISEEU \leq 26.000	€	700,00
26.000 < ISEE/ISEEU \leq 30.000	€	650,00
30.000 < ISEE/ISEEU \leq 40.000	€	600,00
40.000 < ISEE/ISEEU \leq 50.000	€	550,00
ISEE/ISEEU > 50.000	€	500,00

10 Exclusions

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



- 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 2020 examination sessions;
- students with an Italian Bachelor's degree who do not graduate and do not obtain the English language certification by **November 26, 2021**;
- students of Politecnico which do not graduate by the March/April 2022 session;
- students of Politecnico which do graduate, but do not complete the enrolment by **March 31, 2022**;
- students with an Italian Bachelor's degree who do not complete the enrolment process and do not present original of the English language certification (whereas required) by **March 31, 2022**;
- Students with a non-Italian Bachelor's degree who:
 - do not have the required language certificate when they apply online on the Apply@polito platform https://didattica.polito.it/inte/en/apply_msc_lang
 - do not meet the specific requirements and do not present the documents listed at https://international.polito.it/admission/prospective_students/master_of_science/2021_22/admission_requirements https://didattica.polito.it/inte/en/apply_msc_step1_docs
 - do not complete the enrolment process by **October 15, 2021** https://international.polito.it/admission/prospective_students/master_of_science/2021_22/enrolment

Applicants with an Italian Bachelor's degree who are not admitted to the international path 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, if they reach the 140-credit threshold, as provided for by general admission rules.

Students admitted to the international path unable to go to France during their second year for the mobility period due to justified reasons, can continue their studies on the national path in Italy, losing the right to the mobility grant.

11 Contacts

For further information about the programme contents, please contact:

Prof. Alfredo Braunstein

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For further information on application submission, please send your inquiries through the "Ticketing" service, available on your Apply personal page, by selecting the topic "Admissions to Master's degree programmes".

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.