



**UNIVERSITÀ
DEGLI STUDI
DI TRIESTE**

**PROGRAM GUIDE
MASTER'S DEGREE IN PHYSICS
ACADEMIC YEAR 2026-2027**

**Master's degree ministerial class
LM-17
(Italian Ministerial Decree No 1649-2023)**

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FOREWORD

Thanks to an unusually large number of laboratories and research facilities in the field of physics in the Trieste area, the Master's Degree in Physics offers its students unique opportunities for research. Teaching staff collaborate with many of these research facilities, often in coordinating roles, as well as with many important international laboratories. They carry out experimental, theoretical and computational research in various fields of physics. Students have the opportunity to live in a stimulating environment from which they can acquire specialist knowledge useful for their future careers, both in research and in the most technologically advanced sectors of the labour market.

1. ACADEMIC QUALIFICATION

The Master's Degree in Physics lasts two years and is organised pursuant to Italian Ministerial Decree No 1649 of 19th December 2023. Students who pass all exams and successfully defend a thesis of recognised scientific value on a topic of interest to research, industry or academia, will obtain a **Master's Degree in Physics**, regardless of their chosen curriculum.

2. ADMISSION (REQUIREMENTS AND INITIAL PROFICIENCY ASSESSMENT)

In order to be admitted to the Master's Degree in Physics, candidates must: 1) meet the admission requirements; 2) pass the initial proficiency assessment; and 3) possess the necessary language skills as specified below.

Admission requirements

In order to be admitted to the Master's Degree in Physics, candidates must have an Italian bachelor's degree of ministerial class L-30 or L-25 (pursuant to Italian Ministerial Decree No 509/99) or, alternatively, a bachelor's degree or another academic qualification obtained abroad recognised as suitable, provided that it includes an appropriate number of academic credits in the following areas:

- Mathematical Analysis, Geometry, Linear Algebra, and Computer Science for a total of at least 15 ECTS;
- Classical Physics (Mechanics, Thermodynamics, Electromagnetism, Acoustics, Optics), Quantum Mechanics, Special Relativity, Statistical Mechanics, Condensed Matter Physics, Nuclear and Subnuclear Physics, Physics Laboratory (experiments and statistical analysis of data) for a total of at least 30 ECTS, of which at least 12 in Microphysics.

Initial proficiency assessment

The assessment of an adequate initial proficiency is based on candidates' academic records and, where appropriate, on an interview. Candidates who obtained an Italian bachelor's degree of ministerial class L-30 or L-25 (pursuant to MD No 509/99) with a final mark of 90 out of 110 (or higher) will be admitted without any admission test.

Other candidates who meet the above-mentioned requirements may be asked to undergo an interview to ensure they have the necessary foundation skills and knowledge.

Language skills

Candidates must be able to demonstrate an English level B2 on the CEFR scale.

Language proficiency is assessed by analysing the candidate's undergraduate records or on the basis of language certificates and/or diplomas held by the student. In all other cases, admission is subject to a language proficiency assessment carried out by the University Language Centre (CLA). Further information is available on this [page](#).

3. EDUCATIONAL OBJECTIVES

The objective of the program is to train graduates with the following skills and knowledge.

- a solid scientific background and practical specialist skills (depending on the curriculum) in different fields of physics as well as in technological and interdisciplinary fields;
- a thorough command of theoretical physics, mathematics and numerical analysis;

- strong skills in developing advanced representations and models of physical reality, and, where possible, testing them through the experimental method and/or numerical simulations;
- a detailed understanding of experimental data acquisition and analysis techniques, and how to relate them to theoretical models;
- autonomy in applying research methods and problem solving in scientific and technological contexts, including in roles involving responsibility for projects and facilities in the fields of research and innovation;
- a solid foundation to undertake higher-level studies, with the aim of entering the world of research or to further improve their professional level (e.g. PhD or specialisation schools where physics is relevant);
- the ability to fluently speak and write in English, also by using specific and technical jargon.

These are the main learning outcomes:

- 1) general knowledge of advanced physics, i.e. basic knowledge of recent developments in physics which a graduate in a master's degree of class LM-17 must be aware of regardless of their future profession;
- 2) specialist training in certain disciplines
 - 2.1) specialist knowledge in condensed matter physics. The programme aims to train graduates for professions related to research, development and analysis in condensed matter physics, applied physics, materials physics and nanotechnologies and in general for professions requiring specific skills in mathematical modelling and problem solving.
 - 2.2) specialist knowledge in nuclear and subnuclear physics. The programme aims to train graduates for professions related to research, development and analysis in nuclear and subnuclear physics, astroparticles and medical physics.
 - 2.3) specialist knowledge in theoretical physics. The programme aims to train graduates for professions related to research and applications in theoretical physics and in general for professions requiring specific skills in mathematical modelling and problem solving.
 - 2.4) specialist knowledge in physics of complex systems and climate and finance modelling. The programme aims to train graduates for professions related to research and applications in complex systems, with possible deeper knowledge of topics related to climatology or financial models and risk management.
 - 2.5) specialist knowledge in astrophysics and cosmology. The programme aims to train graduates for professions connected with the theoretical, applied and experimental aspects of the science of the universe.
 - 2.6) specialist knowledge in quantum science and technology. The programme aims to train graduates for professions related to research and applications in fields related to quantum information systems, such as computation, machine learning, communication and information theory.

The programme is divided into curricula aimed at training students in the specific areas listed above. They correspond to the research in physical disciplines conducted by the University of Trieste and by the numerous national and international research institutions in the area with which the University has established close collaborations.

To broaden the student's knowledge in physics, the program provides for a large number of credits in core disciplines (type B subjects). Complementary subjects offered within this or other degree programmes allow students to further extend their knowledge in specific areas and develop expertise in other adjacent academic fields. Students can choose elective courses to

extend their knowledge in specific areas of physics and related disciplines and to achieve cultural integration in different disciplines.

In addition to lectures, students can attend other educational activities dedicated to experimental and IT laboratories, which allow them to gain direct experience of some calculation techniques and experimental methodologies using advanced equipment under the guidance of the teachers. These courses allow students to learn how to work in groups, how to pursue a goal, and how to write scientific and technical reports on one's work.

4. ACADEMIC YEAR STRUCTURE

The academic year is divided into two semesters of 13 and 14 working weeks respectively, followed by periods dedicated to further self-study and examinations. Examination rounds are scheduled also in the period preceding the start of the following academic year.

The start and end dates of lectures for academic year 2026-2027 are:

FIRST TERM From 28 September 2026 to 23 December 2026, with possible make-up classes from 7 to 13 January 2027.

SECOND TERM From 1 March 2027 to 4 June 2027, with possible make-up classes from 7 to 11 June 2027.

Christmas break: from 24 December 2026 to 6 January 2027.

Easter break: from 26 March 2027 to 30 March 2027.

Classes will also be suspended on 3 November 2026 and 8 December 2026 due to local and national holidays respectively.

As a general rule, examination rounds cannot be scheduled during term time, with two exceptions: (i) examinations for second-year students during the second term and (ii) any examinations for students who wish to obtain their degree in a period of time shorter than the standard duration of the programme. Students who wish to obtain their degree in a shorter-than-standard period must agree on their personal study programme with the Education Committee.

5. 2026-2027 COURSE OFFER – CURRICULA AND STUDY PROGRAMMES

Starting from academic year 2024-2025, the Master's Degree in Physics has a new structure, approved by the Italian Ministry of University and Research (MUR) on 10 June 2024. The program's structure, the educational objectives of lectures and other activities, possible prerequisites for specific subjects as well as the procedures for all examinations are detailed in the Regulation on Educational Activities of the Master's Degree in Physics.

In particular:

- Annex B1 sets out the educational objectives and the list of lectures and educational activities for each curriculum (i.e. *scheduled educational programme*)
- Annex B2 contains the sheets of all scheduled lectures and educational activities, which highlight especially the specific objectives, requirements and possible prerequisites for each subject.
- Annex B3 lists the formal prerequisites among subjects.

Students who wish to enrol for the academic year 2026-2027 (2026 cohort) are invited to read these documents.

For the academic year 2026-2027, the Master's Degree in Physics, ministerial class LM-17, has six curricula:

1. **condensed matter physics**
2. **nuclear and subnuclear physics**
3. **theoretical physics**
4. **physics of complex systems and climate and finance modelling**
5. **astrophysics and cosmology**
6. **quantum science and technology**

In addition to the standard study programme, students may submit an individual study programme which must be supported by an appropriate rationale and approved by the Course Council .

All study programmes must include at least 6 ECTS of core disciplines (type B subjects) in at least three of the following academic disciplines (pursuant to Italian Ministerial Decree No 1649 of 19 December 2023):

- Experimental Physics and Applied Physics;
- Theoretical Physics, Mathematical Models and Methods;
- Condensed Matter Physics and Physics of Fundamental Interactions;
- Astronomy, Astrophysics and Cosmology, and Geophysics and Atmospheric Sciences.

Students may request the advice of the Education Committee for drafting their study programmes.

Internship

During the second year, students carry out an internship which normally corresponds to 5 credits. The aim is to acquire practical skills related to thesis research and writing. The internship is generally carried out under the guidance of the student's supervisor or another staff member approved by the Course Council. At the end of their internship, students present their work in a public seminar attended by the student's supervisor and the staff member in charge of internships. Some internship proposals are available on this [page](#) (in Italian).

Further information on internships is available on this [page](#).

PART-TIME STUDENTS

Students of the Master's Degree in Physics may ask to be enrolled as part-time students. They will have to earn approximately 40 credits per year, which means that the duration of their programme will be three years. Part-time students' study programme must have between 34 and 52 credits per year. When enrolling, part-time students will have to submit their individual study programme drawn up in accordance with Annex B4 of the regulation on educational activities. Study programmes will be examined by the Course Council on the recommendation of the Education Committee.

Part-time students of the Master's Degree in Physics cannot choose the 30-credits/year option, corresponding to a four-year programme.

SCHOLARSHIPS

Collegio Universitario Luciano Fonda is housed within the former Military Hospital, in Via Fabio Severo 40, Trieste. Thanks to the contributions of the Physics Department and some research institutions operating in Trieste in the field of physics, Collegio Fonda reserves a number of accommodation places and scholarships for deserving students enrolled in physics degree programmes.

Further information is available on the following [page](#).

FACILITIES AND CONTACTS

STUDENT ACADEMIC OFFICE

Via A. Valerio 2, 34127 Trieste – Building F

Tel. +39 040 558 3361 or 2771

email: didattica.df@units.it

OPENING HOURS: Monday 15:00-17:00 and Wednesday 10:00-12:00 in Room T23 or by appointment

ADMISSIONS OFFICE for prospective students

email: areatecnoscientifica.ammissioni@amm.units.it

Virtual front desk: +39 040 558 3546

Monday and Thursday 12:00-13:00 and 15:00-16:00

Tuesday, Wednesday and Friday 12:00-13:00

UNIVERSITY ACADEMIC SERVICES for enrolled students

email: fisica.studenti@amm.units.it

Virtual front desk: +39 040 558 2895

Monday, Tuesday, Wednesday and Friday 12:00-13:00

Thursday 15:00-16:00

ONLINE STUDENT SERVICES AND UNIVERSITY FEES

email: tasse.studenti@amm.units.it

Virtual front desk: +39 040 558 3731

Tuesday, Wednesday and Friday 12:00-13:00

LIBRARY SERVICES

Science and Technology Library

Via A. Valerio 6/3, 34127 Trieste – Building C1, 1st floor – Tel: +39 040 558 3738

email: bts@units.it

email of library book loans service: prestitibts@units.it

The University Library System allows for the consultation of many electronic journals online.

Only the Italian version of this document shall be deemed authoritative.