



SCUOLA GALILEIANA DI STUDI SUPERIORI



UNIVERSITÀ  
DEGLI STUDI  
DI PADOVA

Via Venezia n. 20, Padova  
Edificio Casa dello Studente, piano 1  
Tel. +39 0498278938-8939-1538-8971  
scuola.galileiana@unipd.it  
scuolagalileiana.unipd.it

**THEMATIC SCHOOL**  
**“Theoretical physics of the fundamental interactions”**  
**a.a. 2023/24**

**Art. 1**  
**Thematic School**

Within the framework of DM 231 of 03/31/2023, which has as its first objective the "promotion of collaboration between University Schools of Higher Education and other Institutions of Higher Education, with the aim of establishing partnerships and conventions for the organization of common educational activities", the Galilean School of Higher Education (SGSS) of the University of Padua is organizing in collaboration with the Scuola Normale Superiore (SNS) of Pisa a thematic school called "Theoretical Physics of the Fundamental Interactions." The school will be held in-person from May 27 to May 31, 2024 at the SNS campus, for a total of 30 hours, corresponding to 4 University Educational Credits (CFUs).

The official language of the school is English.

A maximum number of 30 participants are expected to attend the school.

**Art. 2**  
**Learning objectives**

The main learning objective of the Thematic School is to provide an introduction to advanced topics in the theoretical physics of fundamental interactions, which are not normally covered in the curricular teachings of the master's degree. By the end of the course, students will be familiar with some central topics in theoretical research in the physics of fundamental interactions.

**Art. 3**  
**Target audience and admission requirements**

The target audience of the course is students at Italian universities who meet the following requirements:

- Be enrolled in a master's degree program in physics or astrophysics or a doctoral program in physics or astrophysics;
- Be on par with the exams required by their curriculum with a grade point average of at least 27/30;
- Have a (self-certified) knowledge of English at least at the B2 level.

The requirements must be met on the date of application.



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If applications exceed the positions available, applications will be evaluated on a first-come, first-served basis, using the following priority criteria in descending order:

- Master's degree students who are students of the SNS and SGSS;
- SNS PhD students;
- Master's degree students who are enrolled in one of the Italian Schools of Higher Education;
- Other master's degree students;
- Other doctoral students.

#### **Art. 4**

#### **Course organization**

The course will have four regular days, each composed of six hours of lectures (9:00 a.m.-4:45 p.m., with a two-hour lunch break) and one hour of question time (5:00 p.m.-6:00 p.m.), and one day with seminars of vision of the field by qualified guests. Lecture topics will be:

- Effective theories of gravity I (Prof. Trincherini – SNS);
- Effective theories of gravity II (Prof. Dall'Agata – SGSS);
- An Introduction to ten-dimensional strings (Prof. Sagnotti – SNS);
- Axions (Prof. D'Eramo – SGSS);
- Theory of the initial condition of our Universe (Prof. Pimentel – SNS).

#### **Art. 5**

#### **Admission**

Those wishing to apply for admission to the thematic school must do so exclusively online no later than **May 3, 2024** using the service accessible at:

<https://scuolagalileiana.unipd.it/scuolatematicafisica2024>.

The following documents must be attached to the application, under penalty of ineligibility for the course:

- Valid ID;
- Self-certification of English language proficiency at least at the B2 level;
- Self-certification of enrollment in a master's or doctoral degree program among those specified in Article 3;
- Self-certification of exams taken and their grade or historical certificate of exams taken or transcript of records.

Applications completed after the deadline or in a different manner from that specified in this article, whatever the reason, will not be considered.

The order of arrival will be evaluated on the basis of the date of receipt of the application complete in all its parts.

False acts and false statements are punishable under the Penal Code and the special laws on the subject, Articles 75 and 76 D.P.R. 445/2000.

The SGSS may at any time during the proceedings, even after the start of the Course, make checks on the truthfulness of the statements made and documents produced and request the production



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of the original documents. In case of false statements, the SGSS may order by reasoned Decree of the Director the exclusion of candidates, without prejudice to the criminal liability arising therefrom.

**Art. 6**  
**Tuition fees**

All expenses related to the school for selected SNS and SGSS students will be covered by the respective institution. Other selected students will be entitled to reimbursement of travel expenses (Second Class Train Tickets), up to a maximum of €200, and will enjoy room and board in facilities identified by the organizers for the period from May 26 to May 31.

**Art. 7**  
**Final title**

At the end of the course, to those who have attended at least 80% of the lectures with profit, SGSS will issue a certificate of attendance with value within the limits allowed by law, indicating the CFUs achieved.

**Art. 8**  
**Responsible for the selection process and  
processing of personal data**

According to Article 4 of Law No. 241 of August 7, 1990 (New rules on administrative procedure and the right of access to administrative documents) as amended, the Director of the Galilean School is appointed as the person in charge of the procedure referred to in this announcement, Prof. Gianguido Dall'Agata - via VIII Febbraio 1848, 2 - 35122 Padova - tel. 049.8278938 E-mail: [scuola.galileiana@unipd.it](mailto:scuola.galileiana@unipd.it)

Information about the privacy policy is posted on the "Privacy Policy" page of the Galilean School website.

Prof. Gianguido Dall'Agata  
Director of the Galilean School of Higher Education