UNIVERSITÀ DI TRENTO
Dipartimento di Fisica

Doctoral Programme in Physics

TRANSDISCIPLINARY PROGRAMME ON "SPACE DATA SCIENCE AND TECHNOLOGY"

Approved by the Doctoral School Committee on March 14, 2023

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Art. 1 - Description

The Programme "Space data science and technology" (SpaDaST) aims at giving Ph.D students in Physics and Engineering a shared background in space sciences and technology, with specific emphasis on data acquisition, processing and instruments, as well as on other fields of relevance for scientific space missions.

The SpaDaST programme leverages on significant research activities, carried out in Trento in several fields of space science and technology, mostly under the umbrella of the Trento Space Center. These activities contributed to gain expertise in a diverse set of space applications: science data analysis, development of instrumentation for cutting edge missions in multi-messenger astrophysics, planetology and Earth observation. PhD students in Physics, in Information Engineering and Computer Science (IECS) and Materials, Mechatronics and Systems Engineering (MMSE) can access the transdisciplinary programme on Space Data Science and Technology. They have to devote their activity mainly to space-related topics across different disciplines, namely Physical Sciences, Information and Communication Technologies, and Materials, Mechatronics and Systems Engineering.[1] PhD students joining the SpaDaST programme will receive cross-disciplinary training on these subjects with the aim of building a shared knowledge that may support, cross-fertilize and give guidance to their specialized research work, within one of the subfields pursued by the Trento Space Center.

The SpaDaST programme will be supervised by a panel of five members. External scientific advisors will support the panel and monitor the programme activities in order to guarantee their quality.

Art. 2 - Criteria for accessing the SpaDaST programme and achieving the secondary title

Art. 2.1 - Enrollment

A PhD student in Physics, in Information Engineering and Computer Science (IECS) and Materials, Mechatronics and Systems Engineering (MMSE) interested in joining the Programme has to present an application to the panel consisting of:

- motivation letter specific to the transdisciplinary programme,
- a brief research proposal, formally approved by the student's tutor or advisor

Applications must be submitted within **two** months from the start of the Doctoral Programme and are examined by the Panel in order to evaluate the candidate's motivation and her/his attitude for the trans-disciplinary research in SDST.

Regular applications will be accepted starting from the 34th cycle of the Doctoral Programmes.

The admission is in any case subjected to the standard procedures adopted in the Doctoral School/Programme in which the PhD student is enrolled.

Art.2.2. - Co-advisor

The admitted PhD student, in consultation with his/her advisor, proposes a co-advisor for the secondary programme to be ratified by the panel and by the doctoral school committee of the Doctoral School/ Programme.

Art. 2.3. - Credits

[1] According to the internal rules, the transdisciplinary programme adds to the PhD programme in the primary discipline a secondary programme on a complementary discipline

The SpaDaST programme student is required to acquire six extra credits*, in addition to the credits requested by the PhD programme in the primary discipline, within those characterizing the secondary programme .These extra credits have to be registered by the end of the second year of the PhD Program.

*** 6 additional credits:**

1) at least **3 credits** must be earned by taking a **fundamental course** listed in the Manifesto degli Studi

2) additional **3 credits** must be earned either by:

   a) undertaking courses from PhD or Master programmes in Physics, Computer science or Materials, Mechatronics and Systems Engineering, of relevance for space sciences (including the remaining part of a fundamental course)

   b) undertaking international schools of relevance for space sciences (within the limits separately ruled by the PhD programme in the primary discipline).

The compliance of the study plan to the SpaDaST programme is evaluated by the advisor and co-advisor and, if needed by the panel. The panel is responsible for organizing the required additional specific courses compatibly with the existing activities offered by each Doctoral School/Programme

Art. 2.4 - Intermediate evaluation

At the end of the first and second year, the SpaDaST transdisciplinary programme student submit a report on his/her work. The report is sent for evaluation to a commission appointed by the panel.

Art. 2.5 - Exclusion

The panel may decide to exclude PhD students from the transdisciplinary programme in the following cases:
a) failure in timely achieving the credits required for the secondary programme;
b) negative evaluation of the work in progress at the end of the each year.

The exclusion from the transdisciplinary programme does not imply exclusion from the Doctoral School/Programme in the primary discipline, while exclusion from the Doctoral School/Programme automatically implies exclusion from the SpaDaST programme.

Art. 2.6 - Defense

The Ph.D. thesis of the candidate must show the scientific relevance of the research done with respect to the secondary programme as well as the capacity to interpret and frame the results in the context of the secondary discipline. The advisor and the co-advisor jointly propose the referees and the members of the final PhD Examination Committee to the doctoral school committee of the primary Doctoral School/Programme, including at least one expert on the secondary programme.
Prior to the Ph.D. thesis defense and on the basis of the final reports submitted by the student and by the advisors and of the outcomes of the Ph.D. thesis review process, the Panel will propose to the PhD School/Programme where the student is enrolled the eligibility of the candidate to the “Expertus” title.

Art. 2.7 - Title

The transcript of records and the Diploma supplement of the University of Trento will mention that the Ph.D. "fulfilled the requirements of the transdisciplinary programme in Space Data Science and Technology and the thesis had been judged to be an ...(excellent/good/relevant)…. contribution to the field of space data science and technology and consequently he/she is "Expertus" in

space data science and technology". Consequently, he/she can mention the primary title in the following way: "Ph.D. in …(primary PhD programme)…, Expertus in Space Data Science and Technology".

Art. 2.8 - Duration

The present regulation is valid for one academic year and is automatically renewed unless otherwise requested by one of the Doctoral School/Programme.