PhD Course: TECHNOLOGIES FOR FUNDAMENTAL RESEARCH IN PHYSICS AND ASTROPHYSICS In agreement with Istituto Nazionale di Astrofisica – INAF, Istituto Nazionale di Fisica Nucleare – INFN, Politecnico di TORINO and Università degli Studi di BARI ALDO MORO			
Curricula	• MECHANICS • ELECTRONICS • COMPUTING AND INFORMATION TECHNOLOGY • DETECTORS, LASERS AND OPTICS • ELECTROTECHNICS AND ELECTROTECHNICS FOR ACCELERATORS		
Department	FISICA E ASTRONOMIA "GALILEO GALILEI" - DFA		
Duration	3 years		
Number of positions	Scholarships funded by the partner University/Institution	n. 7	**1** scholarship funded by Istituto Nazionale di Astrofisica – INAF; **1** scholarship funded by Istituto Nazionale di Astrofisica – INAF; **1** scholarship funded by Istituto Nazionale di Astrofisica – INAF; **1** scholarship funded by INFN – Laboratori Acceleratori e Superconduttività Applicata (LASA) - Sezione di Milano **- Topic:** Development of HTS Dipole Magnets for the FCC-hh Collider (**curriculum:** ELECTROTECHNICS AND ELECTROTECHNICS FOR ACCELERATORS); **1** scholarship funded by INFN – Laboratori Nazionali del Gran Sasso **- Topic:** Open BIM and Digital Twin: an integrated digital ecosystem to define a new frontier in Asset Management at the Gran Sasso National Laboratories (**curriculum:** COMPUTING AND INFORMATION TECHNOLOGY); **1** scholarship funded by Politecnico di Torino **- Topic:** Applications of integrated photonics for a new generation of astrophysical space measurements (**curriculum:** DETECTORS, LASERS AND OPTICS); **1** scholarship funded by Università degli Studi di Bari "Aldo Moro" **- Topic:** Development of solid-state detectors for future high-energy physics experiments (**curriculum:** DETECTORS, LASERS AND OPTICS);
	Scholarships funded by external public or private bodies/Departments	n. 5	**1** scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA **- Topic:** Design and Development of Adaptive Optics Systems and Components (**curriculum:** DETECTORS, LASERS AND OPTICS); **1** scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA **- Topic:** Research and development of a methodological framework for the prospective assessment of the sustainability of research activities in nuclear physics experiments (**curriculum:** COMPUTING AND INFORMATION TECHNOLOGY); **1** scholarship funded by Officina Stellare S.p.A. **- Topic:** Space Situational Awareness and Characterisation of Resident Space Objects Using Optical Techniques (**curriculum:** COMPUTING

			AND INFORMATION TECHNOLOGY); **1** scholarship funded by Zanon Reseach e Innovation S.r.l. **- Topic:** Development of next-generation thin film SRF cavities in Nb_3Sn on Cu (**curriculum:** ELECTROTECHNICS AND ELECTROTECHNICS FOR ACCELERATORS); **1** scholarship funded by newcleo S.p.A. **- Topic:** Development and Characterization of Molybdenum Alloys Produced via Laser Powder Bed Fusion for Nuclear Applications (**curriculum:** MECHANICS);
	Positions without scholarship	n. 2	
	Total number of positions	**n. 14**	
Selection criteria	PRESELECTION ON THE BASIS OF EVALUATION OF QUALIFICATIONS AND ORAL EXAMINATION		
Oral examination via remote interview:	Applicants who have requested it in the application form will take the oral exam via remote interview using the ZOOM videoconference tool.		
Evaluation criteria	Qualifications: points max 45 Oral examination: points max 55		
Documents to be submitted	Curriculum:	Points: max 35	- Candidate Profile: 1) Relevance of your profile with respect to the Curriculum indicated and with respect to a specific research topic (“Tema Vincolato”) selected; 2) Extended summary of the master’s / specialist / old system degree thesis. For candidates who have not yet obtained the master’s degree (or equivalent), the summary must be countersigned by the supervisor; Candidate career: Grade Point Average, weighted by the number of credits, for exams taken in the Laurea Triennale+ Magistrale/Specialistica or arithmetic average for exams taken in the Laurea Vecchio Ordinamento. For students with a foreign degree, provide the Grade Point Average (GPA) for each degree obtained. Other titles: 1) Time spent abroad during your studies including virtual exchange activities (e.g. Erasmus grants, Time, Erasmus Placement, thesis abroad, etc.); 2) Relevant work experience after graduation (research grants, scholarships, internship periods, period of employment); 3) Scientific awards relevant to the curriculum; 4) Other qualifications (e.g., teaching assistantships).
	Scientific publications:	Points: max 3	Scientific publications: publications in journals/conferences proceedings/books and patents; report full bibliographical information (name of authors, journal or conference name, volume, publication year, pages, DOI). Manuscripts accepted for publication will be considered only if DOI is provided. WARNING: insert publication data in the “LIST OF QUALIFICATIONS” template available at: https://www.unipd.it/en/national-phd-programme- technologies-fundamental-research-physics- astrophysics

	Other documents:	Points: max 7	Candidate Reference Letters (maximum two) by University or Company referees, to be completed strictly through the PICA procedure; Reference letters (maximum two) written through the PICA web form by a faculty member or a person working in industry a motivational letter (no more than two pages) explaining the candidate's research interests, in particular how these fit in with the chosen lines of research. The motivational letter must be prepared according to the "PhD motivational letter" template available at: https://www.unipd.it/en/national-phd-programme-technologies-fundamental-research-physics-astrophysics
Publication of the results of the evaluation of the preselection	Within **09 SEPTEMBER 2025** the evaluating Commission will publish the results of the evaluation of the qualifications in the following website: **https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/tecnologie-ricerca-fondamentale-fisica-astrofisica/admission/** In order to be admitted to the examination, the candidate must get a score of at least 7/10 in the preselection.		
Publication of the timetable of remote interviews and instructions on how to use the ZOOM video conferencing	By 09 SEPTEMBER 2025 the commission will publish on the course website https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/tecnologie-ricerca-fondamentale-fisica-astrofisica/admission/ the timetable of the remote interviews and the instructions on how to use the ZOOM video conferencing for those applicants who have chosen in the application form to take the oral examination via remote interview and who have passed the preselection on the basis of the qualifications with a pass-mark of at least 7/10.		
Oral examination	11 SEPTEMBER 2025 11:00 - The exam may continue: 12 September - Aula R e Aula Mila - Edificio G. Galilei, via F. Marzolo 8 - Padova		
Language/s	**Admission exam:** The admission exam will be taken in: italian or English		
Examination topics	The oral exam will focus on the research topic of the grant for which the application is submitted NB: The research topics available for the three INAF open positions, along with their associated locations, and the topics proposed for the positions without scholarships are available at the website: https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/tecnologie-ricerca-fondamentale-fisica-astrofisica/admission/. During the oral examination, candidates will be asked to specify the topic they intend to apply for		
PhD Course Website:	https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/tecnologie-ricerca-fondamentale-fisica-astrofisica/		
Further information	**Department:** FISICA E ASTRONOMIA "GALILEO GALILEI" - DFA **Address:** Via Osservatorio - N. 3, 35122 Padova (PD) **Contact person:** Zanovello Laura **telephone**: 0499677143 **e-mail:** laura.zanovello@pd.infn.it		
How to apply	The application must be submitted only via the online procedure available at: **https://pica.cineca.it/unipd/dottorati41luglio** The documents must be attached in pdf format. The application and the attached documents are submitted authomatically by closing the online procedure, so no hard copy of the application and of the documents must be sent to the office.		
Deadlines	Publication of the ranking lists and enrollment from **24 September 2025** Beginning of PhD courses **1 November 2025**		