

PhD Course: <b>PHYSICS</b> in agreement with Istituto Nazionale di Fisica Nucleare – INFN			
<b>Department</b>	FISICA E ASTRONOMIA "GALILEO GALILEI" - DFA		
<b>Duration</b>	3 years		
<b>Number of positions</b>	Scholarships funded by the University	n. 11	
	Scholarships funded by the partner Institution	n. 3	<p>1 scholarship funded by Istituto Nazionale di Fisica Nucleare - INFN;</p> <p>1 scholarship funded by Istituto Nazionale di Fisica Nucleare - INFN;</p> <p>1 scholarship funded by Istituto Nazionale di Fisica Nucleare - INFN - Laboratori Nazionali di Legnaro - <b>Topic:</b> Research in Nuclear Physics within the activities of the National Laboratories of Legnaro;</p>
	Scholarships funded by external public or private bodies/Departments	n. 11	<p>1 scholarship funded by Dipartimento di Fisica e Astronomia "G. Galilei" - DFA su fondi Budget MUR Dipartimenti di Eccellenza 2023-2027 - Progetto "Frontiere Quantistiche" (FQ) - CUP: C93C22009250005 - <b>Topic:</b> Fundamental Physics and Quantum Technologies;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "G. Galilei" - DFA su fondi Budget MUR Dipartimenti di Eccellenza 2023-2027 - Progetto "Frontiere Quantistiche" (FQ) - CUP: C93C22009250005 - <b>Topic:</b> Theoretical models for quantum complex systems;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA nell'ambito della Convenzione quadro Padua Center for Network Medicine - PCNM e Fondazione Bruno Kessler - FBK - <b>Topic:</b> Constraining predictive models with complex dynamical systems;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su Fondo Italiano per la Scienza (FIS) - Progetto ADAPTSYS n. FIS00000158 - <b>Topic:</b> Modeling and analysis of critical behavior in human-made multilayer complex systems;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su Fondo Italiano per la Scienza (FIS) - Progetto ADAPTSYS n. FIS00000158 - <b>Topic:</b> Modeling and analysis of spatio-temporal fluctuations in natural physical complex systems;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi Human Frontier Science Program (Ref. RGY0064/2022), nell'ambito della Convenzione quadro Padua Center for Network Medicine - PCNM e Fondazione Bruno Kessler - FBK - <b>Topic:</b> Impact of microscopic environmental factors on population dynamics of localized communities;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi Human</p>

			<p>Frontier Science Program (Ref. RGY0064/2022), nell'ambito della Convenzione quadro Padua Center for Network Medicine - PCNM e Fondazione Bruno Kessler - FBK -</p> <p><b>Topic:</b> Interplay between local population dynamics and global factors;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi del progetto ERC: GLAXES - X-ray-induced fluidization: a non-equilibrium pathway to reach glasses at the extremes of their stability range -</p> <p><b>Topic:</b> Dynamical, thermodynamic and structural properties of glasses irradiated with X-rays;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi del progetto HORIZON-CL4-2021-DIGITAL-EMERGING-02 "PASQuanS2 - Framework for Programmable Atomic Large-scale Quantum Simulation" e del progetto HORIZON-CL4-2021-DIGITAL-EMERGING-01 "European infrastructure for Rydberg Quantum Computing – EuRyQa" -</p> <p><b>Topic:</b> Study of quantum simulation and computation tools and methods, also in connection with the EU projects PASQUANS2 and EURYQA;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi del progetto HORIZON-CL4-2021-DIGITAL-EMERGING-02 "PASQuanS2 - Framework for Programmable Atomic Large-scale Quantum Simulation" e del progetto HORIZON-CL4-2021-DIGITAL-EMERGING-01 "European infrastructure for Rydberg Quantum Computing – EuRyQa" -</p> <p><b>Topic:</b> Study of quantum simulation and computation tools and methods, also in connection with the EU projects PASQUANS2 and EURYQA;</p> <p>1 scholarship funded by Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA su fondi dell'accordo di collaborazione con la ditta Thales Alenia Space - <b>Topic:</b> Applications of Quantum Simulation methodologies and Tensor Networks for Optimization Problems in the Space based Earth Observation Domain – Horizon EU PASQuanS2.1 Framework;</p>
	<b>Total number of positions</b>	<b>n. 25</b>	
<b>Selection criteria</b>	PRESELECTION ON THE BASIS OF EVALUATION OF QUALIFICATIONS AND ORAL EXAMINATION		
<b>Oral examination via remote interview:</b>	Applicants who have requested it in the application form will take the oral exam via remote interview using the ZOOM videoconference tool.		
<b>Evaluation criteria</b>	Qualifications: points max 40 Oral examination: points max 60		

<b>Documents to be submitted</b>	Thesis:	Points: max 5	(Applicants waiting to be awarded the entrance qualification: those waiting to be awarded the entrance qualification by 30th September 2024 will submit a summary of the master thesis project (max. 4 pages) signed by the applicant and the supervisor)
	Curriculum:	Points: max 20	Bachelor degree grade and weighted average of the grades of the exams taken for the master's degree or mean of the grades of the exams taken for the degree in the old University system (4 years). CV complete of publication list, presentations at conferences, prizes, scholarships, stages and schools, Erasmus stays, visits at other Universities, Laboratories or research institutes.
	Other documents:	Points: max 15	At least one and no more than two reference letters; one motivational letter (2 pages maximum) which clarifies the research interests of the applicant, explaining in particular how those fit the research lines present in the Department.
<b>Preselection: First meeting of the Evaluating Commission</b>	30 MAY 2024 09:00		
<b>Publication of the results of the evaluation of the preselection</b>	Within <b>12 JUNE 2024</b> the evaluating Commission will publish the results of the evaluation of the qualifications in the following website: <a href="https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/">https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/</a> In order to be admitted to the examination, the candidate must get a score of at least 7/10 in the preselection.		
<b>Publication of the timetable of remote interviews and instructions on how to use the ZOOM video conferencing</b>	By <b>12 JUNE 2024</b> the commission will publish on the course website <a href="https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/">https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/</a> 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.		
<b>Oral examination</b>	17 JUNE 2024 09:00 - The exam may continue: 18/06/2024, 19/06/2024 and 20/06/2024 at 9:00 - Dipartimento di Fisica ed Astronomia, Via Marzolo, 8 - 35131 Padova		
<b>Language/s</b>	<b>Foreign language/s assessment at the oral examination:</b> At the oral examination the commission will assess the knowledge of the following language/s: English <b>Admission exam:</b> The admission exam will be taken in: Italian or English, at the candidate's choice		
<b>Examination topics</b>	Physics of fundamental interactions, Astrophysics and Astro-particle Physics, Cosmology, Nuclear Physics, Biophysics, Statistical Physics and Physics of Complex Systems, Physics of Matter and Applied Physics		
<b>PhD Course Website:</b>	<a href="https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/">https://www.dfa.unipd.it/didattica/dottorati-di-ricerca/phd-physics/</a>		

<b>Further information</b>	<p><b>Department:</b> FISICA E ASTRONOMIA "GALILEO GALILEI" - DFA  <b>Address:</b> Via Marzolo - N. 8, 35131 Padova (PD)  <b>Contact person:</b> Mazzucco Cristina  <b>telephone:</b> 0498277089 <b>e-mail:</b> cristina.mazzucco@unipd.it</p>
<b>How to apply</b>	<p>The application must be submitted only via the online procedure available at: <b><a href="https://pica.cineca.it/unipd/dottorati40">https://pica.cineca.it/unipd/dottorati40</a></b>  The documents must be attached in pdf format.  The application and the attached documents are submitted automatically by closing the online procedure. So no hard copy of the application and of the documents must be sent to the office.</p>
<b>Deadlines</b>	<p>Publication of the ranking lists and enrollment from <b>2 July 2024</b>  Beginning of PhD courses <b>1 November 2024</b></p>