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di CATANIA



## Ph.D. Course Information Sheet

### 40<sup>th</sup> cycle - A.Y. 2024/2025

NAME OF THE PH.D. COURSE **PHYSICS**

DURATION	3 years
START DATE	October 1st, 2024
LANGUAGES	Italian, English
COORDINATOR	Prof. Livio Lamia
PLACES IN THE PH.D. COURSE	13
SELECTION PROCEDURE	Evaluation of qualifications and research project; written examination, oral examination

## Places and scholarships

Number of scholarships	Financial support	Research Topic (if present)
<b>3</b>	Funds of the University of Catania	Research topic chosen by the student and connected with the ones present in the PhD course in Physics
<b>1</b>	University NRRP Project HPC – Spoke 2	High-performance simulations of ultra-relativistic heavy ion collisions
<b>1</b> RESERVED TO GRADUATES FROM FOREIGN UNIVERSITIES	University NRRP Project HPC – Spoke 3	Physical properties of young stars from the analysis of data from large Astrophysical surveys
<b>1</b>	University NRRP Project NQSTI - Spoke 5	Quantum technologies with superconducting devices
<b>1</b>	University NRRP Project Samothrace – Spoke 1	Development of Single-Photon UV detectors for environment and medicine in the framework of SAMOTHRACE project
<b>3</b>	Funds of the National Institute for Nuclear Physics	Research topic chosen by the student and connected with research topics present at INFN-Sezione di Catania and/or INFN-LNS Catania
<b>1</b>	NRRP M.D. n. 630/2024 in collaboration with ST Lab SRL	Innovative dosimetric solutions for dose spatial fractionation triggering the minibeam biological effect
<b>1</b>	NRRP M.D. n. 630/2024 in collaboration with STMicronics SRL	Laser-matter interaction optimisation for inertial confinement studies



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One place without scholarship is available in addition to the ordinary places

## Selection procedures

	MODALITY	PUBLICATION OF THE RESULTS ON THE UNIVERSITY'S WEBSITE
<b>Evaluation of qualifications and research project</b>	Candidates' presence not required	From July 19th, 2024
<b>Written examination</b>	<b>Date:</b> July 23rd, 2024 - 9.30 am (Italian time) <b>Place:</b> In presence, Department of Physics and Astronomy "Ettore Majorana" (Dipartimento di Fisica e Astronomia "E. Majorana") <b>Language(s):</b> Italian or English <b>Type:</b> Solving open-ended Physics exercises	From July 30th, 2024
<b>Oral examination</b>	<b>Date:</b> September 5th 2024, 9.30 am (Italian time) <b>Place:</b> In presence, Department of Physics and Astronomy "Ettore Majorana" (Dipartimento di Fisica e Astronomia "E. Majorana") <b>or</b> online via Microsoft Teams platform <b>Language(s):</b> Italian or English <b>Type:</b> Interview on basic knowledge of topics relating to the Doctorate	From September 6th, 2024

- \* \* If the number of admitted candidates does not allow the oral test to be held on a single day, a calendar will be published on the website together with the results of the evaluation of qualifications and the research project.
- \* \*\* The results of the admission tests will be available on the website. Publication on the site has the value of notification. No communication will be sent to candidates via email.

## Selection procedure – Places reserved to graduates from foreign universities

	MODALITY	PUBLICATION OF THE RESULTS ON THE UNIVERSITY'S WEBSITE
<b>Evaluation of qualifications and research</b>	Candidates' presence not required	From July 19th, 2024



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project		
<b>Oral examination</b>	<p><b>Date:</b> September 5th 2024, 9.30 am (Italian time)  <b>Place:</b> In presence, Department of Physics and Astronomy "Ettore Majorana" (Dipartimento di Fisica e Astronomia "E. Majorana")  <b>or</b>  online via Microsoft Teams platform  <b>Language(s):</b> Italian or English  <b>Type:</b> Interview on basic knowledge of topics relating to the Doctorate</p>	From September 6th, 2024

\* \* If the number of admitted candidates does not allow the oral test to be held on a single day, a calendar will be published on the website together with the results of the evaluation of qualifications and the research project.

\* \*\* The results of the admission tests will be available on the website. Publication on the site has the value of notification. No communication will be sent to candidates via email.

## Documents to be annexed to the application

Only documents drawn up in **Italian, English or French** will be considered valid and evaluated by the Commission. For identity documents and qualifications issued in a different language, a sworn and certified translation into Italian, French or English made by an authorized body or the University that issued the qualification must be attached.

MANDATORY DOCUMENTS TO BE SUBMITTED WITH THE APPLICATION FORM	
<b>Identity document</b>	Scan of a valid identity document in accordance with the provisions of Art. 35 c.2 D.P.R. 28 December 2000 n. 445 and subsequent amendments: "The passport, the driving license, the boat license, the pension booklet, the license to operate heating systems, the firearms license, the identification cards, provided that they have a photograph and a stamp or other equivalent signature, are equivalent to the identity card, issued by a state administration."
<b>Curriculum Vitae</b>	No specific format is required. The CV must be dated and signed (the signature will be valid only if handwritten or digital). Candidates who submit CVs without a signature will be excluded from the selection.
<b>Qualifications</b>	See Call for applications with particular reference to art. 3, paragraph 4
<b>Progetto ricerca</b>	Research project a) divided into: state of the art; description of the project; expected results; articulation of the project and implementation times; proposed criteria for the verification of the results achieved; Concise bibliography. b) maximum length of 25,000 characters, including title, spaces, formulas, bibliography
<b>Publications Documents</b>	- List of any scientific publications (indicate DOI number, ISBN/ISSN) - Any certificate, attesting to the knowledge of a foreign language in the E.U., issued by



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<b>certifying the knowledge of the foreign language, if any</b>	a legally recognized institution (by way of example but not limited to: TEOFL, IELTS, Cambridge Exol, DELF, DELE, KEG, Goethe Institut, etc.)
<b>Documents certifying computer skills</b>	- Any documents certifying computer skills
<b>Documents relating to further training courses</b>	- University Master of I or II level - Specialization and/or Higher Education courses in subjects related to the research fields covered by the PhD Course - Scientific research, of any type (basic, oriented, finalized, translational, applied, etc.) and carried out in any capacity, including holding research grants and participation in research projects; - Additional Master's degree

### Selection procedure criteria

The assessment is expressed through the attribution of an overall score, as established by art. 5 of the call for applications, to which reference should be made.

### Ordinary places

- 1. Evaluation of qualifications and research project :** minimum score to be admitted to the written examination: 40 points, maximum 60 points
- 2. Written examination:** minimum score to be admitted to the oral examination: 20 points; maximum score: 30 points
- 3. Oral examination –** minimum to pass the examination: 20 points, maximum 30 points

### Places reserved to graduates from foreign universities

- 4. Evaluation of qualifications and research project :** minimum score to be admitted to the oral examination: 40 points, maximum 60 points
- 5. Oral examination –** minimum to pass the examination: 40 points, maximum 60 points