

<b>PHYSICS</b>	
<b>CYCLE</b>	<b>XXXVII</b>
<b>COORDINATOR</b>	Prof. Stefano CARRETTA email: <a href="mailto:stefano.carretta@unipr.it">stefano.carretta@unipr.it</a> Department of Mathematical, Physical and Computer Sciences
<b>DURATION</b>	3 anni
<b>STARTING DATE OF THE PHD PROGRAM</b>	01/01/2022
<b>PARTNER INSTITUTION FOR UNIVERSITY COOPERATION AGREEMENTS</b>	<ul style="list-style-type: none"> <li>• Technische Universität Dresden (Germany)</li> </ul>
<b>TRAINING OBJECTIVES</b>	
<p>The PhD in Physics, with a duration of 3 years, is established as a unifying element of the third-level University education in the Physics area. Besides their main commitment to the research activity, students are supposed to spend a substantial part of their training period in attending advanced courses as well as national and international schools. Students are encouraged to spend part of their time abroad, in order to participate in scientific collaborations in their fields of interest, and follow advanced courses in support of their research program. During the three years, teaching commitments are progressively reduced towards a full time engagement in the research activity. The evaluation of the training program is carried out - at the end of each year - through open seminars held by the students. The independent scientific research is expected to lead to publication of results in international, peer reviewed journals. The ultimate goal of the PhD in Physics is a highly specialized scientific training that opens professional carriers in academic institutions and research laboratories, either public or private. The PhD in Physics is divided into three areas corresponding to major groups of disciplines of Physical Sciences covered by the research activity of the Department of Mathematical, Physical and Computer Sciences: Condensed Matter and Materials Physics, Theoretical Physics, Biophysics and Applied Physics.</p>	
<b>ADMISSION REQUIREMENTS</b>	<p>Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission:</p> <ul style="list-style-type: none"> <li>– Laurea specialistica or Laurea magistrale (second cycle master's degree)</li> <li>– Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations);</li> <li>– Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral program</li> </ul> <p>Undergraduate applicants may also submit applications with the obligation of getting their degree by <b>October 31<sup>st</sup> 2021</b>.</p>

<b>POSITION PUT OUT TO COMPETITION</b>	<b>3</b>	<b>With Scholarship</b> - Action IV.5 - "Doctorates on Green issues of the PON R&I 2014-2020"	<b>3</b>
<b>Position with Scholarship LINKED TO SPECIFIC TOPICS</b>			
<p>When registering for the competition, candidates must indicate to the Examining Board, in the specific section of ANNEX A, their interest of being assigned one or more scholarships on a specific topic. The Examination Board will evaluate their eligibility based on specific competences, experience and specific aptitudes of the applicants.</p>			
<b>N°</b>	<b>ACTION</b>	<b>BOUND RESEARCH TOPIC</b>	
<b>3</b>	Action IV.5 - "Doctorates on Green issues of the PON R&I 2014-2020"	<ul style="list-style-type: none"> <li>• Lab-on-Chip technology for predictive maintenance in green energy production field</li> <li>• Systems for large-scale electrical energy-storage with low environmental impact deriving from pyrolysis of biomass waste</li> <li>• Towards a new generation of transistors for low-loss power electronics: development of novel materials and devices</li> </ul>	

<b>ADMISSION PROCEDURES</b>	<b>Assessment of QUALIFICATIONS:</b> up to 50 points (a minimum score of 20 points shall be required to be admitted to the Oral Exam) <b>ORAL EXAM:</b> up to 70 points <b>Minimum score for ELIGIBILITY:</b> 70/120
<b>Foreign Language</b>	Language the fluency of which shall be assessed during the Oral Exam: <b>ENGLISH</b> .
<b>CANDIDATES ADMITTED TO THE ORAL TEXT CAN TAKE THE EXAM IN PRESENCE OR REMOTELY IN AUDIO AND VIDEO TELECONFERENCE</b> (Candidates who intend to take the Oral Exam remotely must submit request, to this purpose, as per the model attached to the competition notice)	
<b>THE INTERVIEW MAY BE HELD ALSO IN ENGLISH</b>	
<b>LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT</b>	
<b>MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION</b>	
<b>ANNEX A</b>	(art. 5 of the Competition notice)
<b>Identification Document</b>	Scanned Copy of a valid identity document with photo (i.e. identity card, passport)
<b>Curriculum Vitae et studiorum</b>	No specific CV format is required (see art. 4 of the Competition notice)
<b>Abstract of degree thesis</b>	Abstract of the second cycle master's degree thesis. Undergraduate applicants must submit the draft of the thesis countersigned by their supervisor.
<b>Qualifications</b>	<b>Certificates and academic transcript of records for both Bachelor' and Master' degrees</b> containing the following details for each degree held: (art. 4 of the Competition notice): University that granted the degree - Type of degree (first cycle/second cycle/single cycle) Name of the degree program - Date of graduation - Final mark - List of exams and corresponding scores (academic transcript of records) - Translation into Italian or English (only for degrees issued in languages other than Italian or English).
<b>Research Project</b>	Drawn up according to the format attached to the competition announcement <b>THE EVALUATION OF THE PROJECT WILL TAKE PLACE DURING THE ORAL EXAM</b>
<b>FURTHER QUALIFICATIONS THAT MAY BE ATTACHED TO THE APPLICATION, IF IN POSSESSION OF THE APPLICANT</b> (only qualifications attested by a document drawn up in Italian or in English)	
<b>Statement of Research interest</b>	Short text – maximum 1 page – in Italian or in English, aimed at explaining the candidate's reasons to attend the PhD program and at describing her/his specific research interests
<b>Scientific Publications</b>	Articles on national and international journals, papers presented at conferences or symposia, book chapters etc.
<b>Other Academic qualifications</b>	First or second level Master's degree obtained in Italy and/or specialization degree in subjects consistent with the research topics of this PhD program

<b>Other experiences (training, work, research, teaching, etc.)</b>	<ul style="list-style-type: none"> <li>– Research activity (basic, applied, translational, etc.) carried out in any capacity, including when covered by research grant, and as a staff member of research units</li> <li>– Working activity</li> <li>– Professional and/or training internship</li> <li>– Language proficiency certificates</li> <li>– Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes)</li> <li>– Other qualifications attesting the suitability of the applicants (scholarships, awards, etc.)</li> </ul>
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#### EVALUATION CRITERIA

QUALIFICATION	EVALUATION CRITERIA	POINTS
<b>Curriculum Vitae et studiorum</b>	Including academic career and postgraduate experience, accompanied by a statutory declaration in lieu of the certification of the exams passed with the relevant marks, as well as the final graduation mark. The marks of the exams and the graduation mark will be the most relevant element of the evaluation.	<b>Up to 25 points</b>
<b>Graduation thesis</b>	Consistency of the Master' Degree thesis with the doctoral program research topics. The assessment will make use of the information contained in the abstract (max 1 page) of the thesis (although not yet discussed, in this case countersigned by the thesis supervisor) and in the curriculum, where a brief description of the thesis work should be reported.	<b>Up to 5 points</b>
<b>Statement of Research interest</b>	The motivation expressed by the candidate in relation to the topics of the research doctorate will be assessed.	<b>Up to 10 points</b>
<b>Other qualifications</b>	Publications, awards, presentations to scientific meeting, stages, fellowships, reference letters, etc	<b>Up to 10 points</b>
ORAL EXAM	EVALUATION CRITERIA	POINTS
The ORAL EXAM includes the presentation and discussion of the research project and is intended to assess the suitability of the applicant to pursue scientific research as well as the general knowledge of issues connected to the related topics	<p>Criteria relating to the evaluation of the project:</p> <ul style="list-style-type: none"> <li>o scientific value and originality of the proposal</li> <li>o articulation of the proposal</li> <li>o feasibility of the proposal</li> <li>o consistency with the related issues</li> </ul> <p>Other criteria:</p> <ul style="list-style-type: none"> <li>o preparation on issues related to the master's thesis</li> <li>o preparation on the topics of the PhD course</li> <li>o knowledge of a foreign language/knowledge of the foreign language</li> </ul>	<b>Up to 70 points</b>

#### SCHEDULE OF THE ADMISSION EXAMS

<b>ORAL EXAM</b>	<b>DATE</b>	25 October 2021 (with possible extension in the following day)
	<b>TIME</b>	09.00 am (Italian time) The schedule of oral examinations will appear at <a href="http://smfi.unipr.it/it">http://smfi.unipr.it/it</a>
	<b>PLACE</b>	Department of Mathematical, Physical and Computer Sciences PHYSICS BUILDING Parco Area delle Scienze, 7/A – Campus 43124 PARMA - ITALY

**OTHER INFORMATION**

The Oral Exam will focus on the description of the research work carried out to prepare the Graduation Thesis for the Laurea Magistrale/Specialistica, as well as on the research project that the candidate proposes to carry out within the research topics of the Research Doctorate Program in Physics at the Department of Mathematical, Physical and Computer Sciences of the University of Parma which are described at <http://smfi.unipr.it/it>

For foreign candidates, the admission examinations may be held in English at the candidate's choice.