



ANNEX A

PH.D. PROGRAMME IN BIOMOLECULAR AND HEALTH SCIENCES Academic year 2023/2024 – XXXIX CYCLE				
Administrative Department	Department of BIOMOLECULAR SCIENCES			
Coordinator	Prof. Marco Bruno Luigi ROCCHI			
Duration of the Programme	3 years			
Available positions	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; vertical-align: top; padding: 5px;"> <p>Scholarships funded by the University, 2 of which are reserved for candidates with qualifications obtained abroad (Candidates who intend to apply for positions with scholarships reserved for those who obtained their qualification abroad must specify that in the online procedure)</p> </td> <td style="width: 5%; text-align: center; vertical-align: middle;">n. 9</td> <td style="width: 65%; vertical-align: top; padding: 5px;"> <p>Priority research topics. The candidate can choose between one of these priority research topics:</p> <p>Priority research topics - 1 Epigenetic reprogramming of cancer cells through small synthetic molecules.</p> <p>Priority research topics - 2 Red Blood Cell-derived extracellular vesicles as a new drug delivery system.</p> <p>Priority research topics - 3 The role of nitrosative and endoplasmic reticulum stress in endothelial dysfunction.</p> <p>Priority research topics - 4 Mechanisms of action of ataxia telangiectasia mutated (ATM) 4-53 and ATM Sint variants as a function of cellular genotype in different models of ataxia telangiectasia, key step forward the personalized gene-delivery and gene therapy approaches.</p> <p>Priority research topics - 5 N-glycosylation and the insulin-like growth factor-1 (IGF-1) signaling pathway: a promising therapeutic target for diseases associated with disorders of N-glycosylation.</p> <p>Priority research topics - 6 Drug-like inhibitors of endoplasmic oxido-reductin 1 (ERO1) for cancer treatment.</p> </td> </tr> </table>	<p>Scholarships funded by the University, 2 of which are reserved for candidates with qualifications obtained abroad (Candidates who intend to apply for positions with scholarships reserved for those who obtained their qualification abroad must specify that in the online procedure)</p>	n. 9	<p>Priority research topics. The candidate can choose between one of these priority research topics:</p> <p>Priority research topics - 1 Epigenetic reprogramming of cancer cells through small synthetic molecules.</p> <p>Priority research topics - 2 Red Blood Cell-derived extracellular vesicles as a new drug delivery system.</p> <p>Priority research topics - 3 The role of nitrosative and endoplasmic reticulum stress in endothelial dysfunction.</p> <p>Priority research topics - 4 Mechanisms of action of ataxia telangiectasia mutated (ATM) 4-53 and ATM Sint variants as a function of cellular genotype in different models of ataxia telangiectasia, key step forward the personalized gene-delivery and gene therapy approaches.</p> <p>Priority research topics - 5 N-glycosylation and the insulin-like growth factor-1 (IGF-1) signaling pathway: a promising therapeutic target for diseases associated with disorders of N-glycosylation.</p> <p>Priority research topics - 6 Drug-like inhibitors of endoplasmic oxido-reductin 1 (ERO1) for cancer treatment.</p>
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		<p>Priority research topics - 7 Study of the orexin/2-arachidonoylglycerol system in early neurodegeneration and microglial activation related to obesity and subsequent synaptic impairment.</p> <p>Alternatively, the candidate may opt for one of the general research topics:</p> <ul style="list-style-type: none"> -Molecular targets and new therapeutic agents; -Cell signaling and intercellular communication; -Molecular mechanisms of disease -Physiopathology of oxidative stress; -Diagnostic and prevention of infectious and multifactorial diseases; -Nutrition science and food safety -Neural plasticity in physiology and pathology; -Physical activity and exercise for health promotion, disease prevention and functional rehabilitation; -Statistical and mathematical methods in biology and medicine. <p>In case of selection of the free topic, the title of the research project that will be illustrated in the oral exam must be entered in the online procedure.</p>
	<p>Scholarship funded by an external company with a restricted research topic</p> <p>(The scholarship will be activated only if the agreement is signed)</p>	<p>Scholarship funded by GSK Vaccines Institute for Global Health s.r.l. on the following Restricted research topic:</p> <p>n. 1 Immune response elicited in animals by carbohydrate-based vaccines obtained through different technologies.</p>
	<p>PNRR funded thematic scholarships (Ministerial Decree 118/2023) Mission 4, Component 1 - Investment 4.1 "Extension of the number of research doctorates and innovative doctorates for public administration and cultural heritage"</p> <p>CUP: H54D23000990006</p>	<p>n. 3</p> <p>Restricted research topic 1: Urban environmental pollutants and epigenetic modulation.</p> <p>Restricted research topic 2: Advanced carbon-engineered organ-on-a-chip: Innovative nanotools-based platforms for brain Injury repair.</p> <p>Restricted research topic 3: Production of a protein-based biopolymer, through plant biotechnologies for the synthesis of environmentally friendly bioplastics.</p>



	Positions without scholarship	n. 1	The topic for this position can be chosen by the candidate amongst the priority research topics or the general research themes of the Ph.D. Programme listed above. Those who intend to apply exclusively for positions without scholarship must indicate it in the online procedure.
Reference topics	BIO 04 Plant physiology BIO 09 Physiology BIO 10 Biochemistry BIO 11 Molecular biology BIO 12 Clinical biochemistry and molecular biology BIO 13 Experimental biology BIO 14 Pharmacology BIO 16 Human anatomy BIO 17 Histology BIO 19 General microbiology MED 01 Medical statistics MED 03 Medical genetics MED 04 Experimental medicine and pathophysiology MED 07 Microbiology and clinical microbiology MED 42 Hygiene and public health MED 46 Medical and biotechnology laboratory techniques M-EDF 01 Methods and teaching of motor activities		
How to apply	The application must be submitted exclusively via the online procedure available at: https://pica.cineca.it/uniurb/dottorato39 by and no later than June 29, 2023 at 11:00 (Italian time)		
Selection procedure	EVALUATION OF QUALIFICATIONS AND ORAL EXAMINATION (via Zoom)		
Scores for the evaluation of qualifications and the oral exam	Points for evaluation of qualifications: up to 20 Points for the oral exam (including the research project and knowledge of the English language): up to 60 Minimum final score 60/80		
Criteria for the evaluation of qualifications	Curriculum vitae et studiorum: up to 8 points Scientific publications (the Master's thesis can be included in the publications): up to 8 points Other scientific and cultural titles including eventual reference letters (max. 2): up to 4 points		
Documentation to be attached to the application form	Curriculum vitae et studiorum	Template available at the following link: https://www.uniurb.it/international/regular-students/phd-programs/admission-information	
	Candidates who apply for PNRR-funded scholarships with a restricted research topic, (Ministerial Decree 118/2023) must present a research project.	The detailed research project (max 5,000 characters with additional bibliographic references) must be written in English and must explicitly concern the chosen restricted topic by referring to the relative illustrative sheet	



		<p>published in the "official documentation" section of the course website.</p> <p>The project must be divided into: a) state of the art; b) research objectives c) theoretical and methodological framework d) research design; e) expected results</p> <p>The dedicated form available in the "Official documentation" section of the course website must be used for the research project.</p>
Publication of the results of the evaluation of qualifications	<p>The results of the evaluation of the qualifications will be published on July 12th, 2023 in the "Official Documentation" section of the website: www.uniurb.it/biomolecular-and-health-sciences</p>	
Informations on the oral exam	<p>Oral exam: it will be held in English and will mainly focus on a research project related to the candidate's chosen topic and on the research objectives that the candidates intend to pursue during the Ph.D. Programme.</p> <p>The research project must describe a possible research activity to be carried out in the three-year period of the Ph.D. Programme and must be divided into a) rationale, b) experimental design and objectives, c) materials and methods, d) expected results.</p> <p>For the evaluation of the oral exam, the following aspects will be considered: clarity and linearity of presentation, argumentative ability, theoretical and methodological knowledge in the context of the proposed research project, congruence of study interests and research objectives with the research topics of the Ph.D. Programme. The motivational aspects will also be considered.</p>	
Calendar of interviews and Zoom link	<p>Interviews, for candidates admitted to the oral exam, will take place starting from July 17th, 2023 at 9:00 CEST by videoconference.</p> <p>In case of a high number of candidates to be examined, the commission reserves the right to distribute the interviews over several days and time slots.</p> <p>The calendar of interviews and the Zoom link for the interviews will be indicated in the file "CALENDARIO PROVA ORALE /CALENDAR OF INTERVIEWS" which will be published in the "Official Documentation" section of the website: www.uniurb.it/biomolecular-and-health-sciences</p> <p>Any changes will be published at the same link.</p>	
Final merit ranking	<p>The final merit ranking will be published in the "Official Documentation" section of the website: www.uniurb.it/biomolecular-and-health-sciences</p>	
Information on the activities of the PhD programme	<p>www.uniurb.it/biomolecular-and-health-sciences</p>	
For information requests regarding scientific aspects of the Programme	<p>Ph.D. Programme Coordinator: Professor Marco B.L. Rocchi, tel. 0722-303304 Email: marco.rocchi@uniurb.it</p> <p>Please indicate "Ph.D. in BIOMOLECULAR AND HEALTH SCIENCES_ XXXIX cycle" in the email subject</p>	
For information	<p>Ph.D. Office: dottorato@uniurb.it</p>	



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requests regarding administrativ e aspects and support with the online application procedure	Please indicate "Ph.D. IN BIOMOLECULAR AND HEALTH SCIENCES_ XXXIX cycle" in the email subject
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