

Ph.D. PROGRAMME IN ECOLOGY AND SUSTAINABLE MANAGEMENT OF ENVIRONMENTAL RESOURCES			
Coordinator	Prof. Claudio CARERE		
Department	Department of Ecological and Biological Sciences		
Program duration	3 years: 1 st November 2022 – 31 th October 2025 PhD Thesis due date: 30 th September 2025		
Program objectives	<p>The PhD Program in "Ecology and Sustainable Management of Environmental Resources" is activated at the Department of Ecological and Biological Sciences (DEB). It is an innovative program with high interdisciplinarity, in which themes of ecological, biological, agro-forestry and chemical sciences converge. The unifying theme is the application of general principles of Life Sciences for the purpose of sustainable management of environmental and natural resources: from biodiversity, to agricultural and forestry resources, to biomolecules. The aim of the course is training in the field of basic and applied ecological research with particular regard to the sustainable use of natural resources, environmental management, eco-sustainable optimization of production processes (including the development of new green active compounds) and the mitigation of human impacts on biodiversity at all organization levels. PhD students will acquire the skills needed to address complex and multidisciplinary problems associated with both the research activity and the management and conservation of natural resources. From a training point of view, specific objectives are: i) to provide the skills needed to operate in highly multidisciplinary scientific research areas with a high degree of autonomy, originality and the use of rigorous methodological approaches; (ii) to drive the development of communication skills in presenting research results and in drafting competitive scientific projects. According to these goals, compulsory educational activities aimed at enhancing language proficiency, data analysis capabilities, and the ability to disseminate scientific results will be offered. The multidisciplinary nature of the research developed by the members of the Scientific Board ('Collegio dei Docenti') matches with the width of the course, including many different disciplines ranging from green chemistry to forestry, from molecular genetics to evolutionary ecology also in relation to global change.</p>		
No. of positions	Total positions	13	
	Positions with scholarships funded by Tuscia University	9	

	Positions with “PNRR Digital and Environmental Transitions”	1	D.M. 351/2022 - M4C1 Inv. 3.4
	Positions with “PNRR Research” scholarship	1	D.M. 351/2022 - M4C1 Inv. 4.1
	Positions with “PNRR DM 352” scholarship	2	D.M. 352/2022- M4C2 Inv. 3.3
Scholarships co-funded by Tuscia University	<p>No. 1 scholarship co-funded by DEB and UNITUS researchers on the interaction between plants and soil microorganisms in the Alpine environment and the impact of climate change.</p> <p>N. 1 scholarship co-funded by DEB researchers and UNITUS on the study of naturalness indicators in the forest ecosystems of the Sila National Park - Biosphere Reserve.</p> <p>N. 1 scholarship funded by DEB researchers on the study of genetic aspects of <i>Posidonia oceanica</i> in relation to actions of ecosystem restoration.</p> <p>N. 1 scholarship funded by DEB researchers on the study of dispersion of conservative and non-conservative quantities in the coastal marine environment.</p> <p>N. 1 scholarship funded by DEB researchers on the study of the criteria and methods to mitigate the impacts of extractive activities on groundwater resources.</p> <p>N. 1 scholarship funded by DEB researchers on the development of guidelines and techniques for the census of natural and anthropogenic cavities for the prevention of sinkhole hazards.</p> <p>N. 1 scholarship co-funded by IRSA-CNR and UNITUS on direct and indirect effects of contaminants on the ecosystems</p> <p>N. 1 scholarship co-funded by IIA-CNR and UNITUS on genomic meta-analyses in specific eukaryotic and prokaryotic organisms with CO₂ removal capacity.</p> <p>No. 1 scholarship funded by the National Institute of Health on the development of an integrated approach including alternative methods to animal testing for the evaluation of the carcinogenic power of nitrosamines.</p>		
Positions with “PNRR DM 351” scholarship	<p>M4C1 Inv. 3.4 – “Digital and Environmental Transitions” no. 1 scholarship to undertake research on the study and development of a host-parasite system for monitoring a coastal marine ecosystem.”</p> <p>M4C1 Inv. 4.1 – “PNRR Research” no. 1 scholarship to undertake research on the interaction between phenotypic plasticity and hybridization in determining the success of invasive species”</p>		

<p>Positions with “PNRR DM 352” scholarship</p>	<p>M4C2 Inv. 3.3 “Innovative doctorates aimed at strengthening the demand of innovation of enterprises and promoting the employment of researchers by enterprises”</p> <p>no. 1 scholarship to undertake research on “The impact of the installation of photovoltaic systems on the quality of the soil and on the biodiversity of the dsite”</p> <p>no. 1 scholarship to undertake research in “Development of sustainable techniques for the detection of food fraud”</p>
	<p>Please note that the acceptance of a PNRR scholarship implies obligations additional to those of a regular scholarship: see art. 14 of this Call.</p>
<p>Admission requirements</p>	<p>Application to the public competition is open to all who, by the date this call expires, possess one of the qualifications listed hereunder, regardless of age and citizenship:</p> <ul style="list-style-type: none"> - an Italian “laurea specialistica” obtained according to the Ministerial Decree n. 509/1999; - an Italian “laurea magistrale” obtained according to the Ministerial Decree n. 270/2004; - an Italian equivalent university degree obtained under Italian regulations previously in force and whose length is no less than 4 years; - a foreign degree equivalent to those mentioned above. <p>Admission is also open to those who will finish their degree by October 31st. In such cases admission will be “conditional”; the applicants will send by mail (dottorati@unitus.it) or hand out to the “<i>Ufficio Offerta Formativa</i>” a self-certification of the relative degree (a certification in case of Non-EU students). Self-certification (or certification in case of Non-EU students) should state the name of the awarding University, award date, grade and type of qualification (“vecchio ordinamento”, “Specialistica”/“magistrale”) and a copy of a valid identity document. Applicants not possessing the admission requirements yet, must indicate the expected date of graduation/qualification.</p>
<p>Evaluation of candidates <i>(maximum score: 80/80 points)</i></p>	<p>Evaluation of academic qualification, written and oral entrance examination</p> <p>English Language Knowledge</p> <p>The evaluation of candidates will be based on:</p> <ul style="list-style-type: none"> - an evaluation of academic ranking that will precede the written and oral exam; - a written essay; - an oral examination. <p>The results of the evaluation of academic ranking will be published on the Tuscia University web site (www.unitus.it) at the section “<i>Didattica</i>”</p>

	<p>(then see under “<i>Dottorati di Ricerca</i>”). The score obtained will be added to the score of the written and oral examinations to give the final total. The results will be published on the Tuscia University web site at the section “<i>Didattica</i>” (“<i>Dottorati di Ricerca</i>”).</p> <p>The written essay can be written either in Italian or in English.</p> <p>Together with the application form, candidates should present a research project concerning one of the topics of the Ph.D., with a maximum length of 3 pages, written in Italian or in English. The research project will be discussed during the oral exam.</p> <p>All the (non UK) applicants will take an English exam.</p>
<p>Evaluation of academic qualification (maximum score: 20/80 points)</p>	<ul style="list-style-type: none"> - Academic career (Certificate with the list of marks obtained during the academic career and final graduation): max score: 6 points - Scientific publications related to the topics of Ph.D.: max score 6 points - Participation in research projects: max score: 4 points - Professional experiences and other qualifications considered useful: max score 4 points
	<p>Written exam: maximum score 30/80 points</p> <p>To gain access to the oral interview, candidates must have attained a minimum score of 21/80 points.</p> <p>Oral exam: maximum score 30/80 points</p> <p>Minimum score required to pass the oral interview 21/80 points</p> <p>Language for the examinations: Italian (Italian candidates, with a further English exam) or English (foreign candidates)</p>
<p>Examination topics</p>	<p>The written exam will consist of the preparation of a short essay on one of the following topics:</p> <ul style="list-style-type: none"> - Basic Ecology - Marine Ecology - Community Ecology - Molecular Ecology and Phylogeny - Ecology and Adaptation in Extreme Environments - Ecology of Microorganisms - Bioindicators - Management and conservation of exploited and endangered species - Sustainable management of marine and coastal environment - Environmental Hygiene - Parasitology - Ecotoxicology - Mutagenesis and Carcinogenesis - Forestry ecology - Green chemistry

	<ul style="list-style-type: none"> - Methods and innovation in green chemistry - Conservation of nature and biodiversity - Environmental Risk <p>The oral exam will focus on the discussion of the research project, as well as on the topics of the Ph.D. programme. It will be aimed to verify the candidate's aptitude for the scientific research, besides his/her knowledge in the field of Ecology.</p>
Exam dates and location	<p>The exams will be held between 5th –20th September 2022.</p> <p>The date(s) of the interview will be published on the University website at the site: <i>www.unitus.it >Didattica>Offerta post lauream> Dottorati di Ricerca</i> by the deadline of the application call.</p>
Contacts	<p>Contact persons of the Ph.D. Programme:</p> <p>Prof. Claudio CARERE (Coordinator) e-mail: dottorato.eco@unitus.it</p> <p>Dr. Fabrizio SCIALANCA e-mail: fabrizio.scialanca@unitus.it</p>