

Ph.D. Program in Science, Technology and Biotechnology for Sustainability							
Coordinator	Prof. Mauro Moresi						
Department	Department for Innovation in Biological, Agrofood and Forest systems (DIBAF), University of Tuscia						
Partner Institution	University of Molise, Campobasso						
Program duration	3 years: 1st November 2017 – 31 st October 2020 Thesis Defence: within April 2021						
Program objectives	<p>The main aim of this PhD course is to provide high quality training in research methods and prepare professional researchers for University, Research Institutions and Industries in three fields of research:</p> <ol style="list-style-type: none"> 1) Food products; 2) Forest Ecology and environmental technologies; 3) Biological systems/ Bioindustries. <p>The research activities of the curriculum in <i>Food products</i> will cover the food science and technology sector and deal with food processing, preservation and quality assessment and management, as well as the assessment of the environmental impact of food processing. The formation activity will involve the cooperation with the National Network of the Italian PhD Research in <i>Food Science Technology and Biotechnology</i>.</p> <p>The research activities of the curriculum <i>Forest ecology and environmental technologies</i> will include the functionality and structure of forest systems, the soil system being included; forest bio-diversity; monitoring and management of forest and environmental resources; the ecological recovery of degraded ecosystems; climate and global change mitigation and adaptation.</p> <p>The research activities of the curriculum <i>Biological systems/ Bioindustries</i> will include basic and applied biology for animal, plant, and microbial systems; bioremediation and human health biotechnologies, as well as the sustainable farming and fitosanitary management of Mediterranean cultural systems.</p> <p>The formation programme is directed to provide students with skills in English language, statistic analysis of experimental data, and assessment of the environmental sustainability of complex systems.</p>						
No. of positions	<table border="1"> <tr> <td>Total places</td> <td>10</td> </tr> <tr> <td>Places with scholarships</td> <td>9</td> </tr> <tr> <td>Places without scholarships</td> <td>1</td> </tr> </table>	Total places	10	Places with scholarships	9	Places without scholarships	1
Total places	10						
Places with scholarships	9						
Places without scholarships	1						
Curricula (In the application form the candidate must specify the curriculum of interest)	<table border="1"> <tr> <td>Curriculum in <i>Food products</i></td> <td>no. 2 positions with scholarships</td> </tr> <tr> <td>Curriculum in <i>Forest Ecology and environmental technologies</i></td> <td>no. 6 positions with scholarships</td> </tr> <tr> <td>Curriculum in <i>Biological systems/ Bioindustries</i></td> <td>no. 1 position with scholarship no. 1 position with no scholarship</td> </tr> </table>	Curriculum in <i>Food products</i>	no. 2 positions with scholarships	Curriculum in <i>Forest Ecology and environmental technologies</i>	no. 6 positions with scholarships	Curriculum in <i>Biological systems/ Bioindustries</i>	no. 1 position with scholarship no. 1 position with no scholarship
Curriculum in <i>Food products</i>	no. 2 positions with scholarships						
Curriculum in <i>Forest Ecology and environmental technologies</i>	no. 6 positions with scholarships						
Curriculum in <i>Biological systems/ Bioindustries</i>	no. 1 position with scholarship no. 1 position with no scholarship						
Scholarships	<table border="1"> <tr> <td>curriculum in <i>Food products</i></td> <td>n. 2 scholarships funded by the University of Tuscia</td> </tr> <tr> <td>curriculum in <i>Forest Ecology and environmental technologies</i></td> <td>n. 3 scholarships funded by the University of Tuscia n. 3 scholarships funded by the University of Molise</td> </tr> </table>	curriculum in <i>Food products</i>	n. 2 scholarships funded by the University of Tuscia	curriculum in <i>Forest Ecology and environmental technologies</i>	n. 3 scholarships funded by the University of Tuscia n. 3 scholarships funded by the University of Molise		
curriculum in <i>Food products</i>	n. 2 scholarships funded by the University of Tuscia						
curriculum in <i>Forest Ecology and environmental technologies</i>	n. 3 scholarships funded by the University of Tuscia n. 3 scholarships funded by the University of Molise						

	curriculum in <i>Biological systems/ Bioindustries</i> n. 1 scholarship funded by the University of Tuscia														
Admission requirements	<p>Application to the public competition is open to all, regardless of age and citizenship, who, by the date this call expires, possess one of the qualifications listed below:</p> <ul style="list-style-type: none"> - an Italian “laurea specialistica” degree, obtained according to the Ministerial Decree n. 509/1999; - an Italian “laurea magistrale” degree, obtained according to the Ministerial Decree n. 270/2004; - an Italian equivalent university degree obtained under the Italian regulations previously in force, the time-span of which being no less than 4 years; - a foreign university degree equivalent to those mentioned above. <p>Admission is also open to university students who will finish their MS degree by October, 31st, 2017. In such cases admission will be “conditional”; the applicants will send by mail (capuani@unitus.it) or hand out to the “Ufficio Offerta Formativa” 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 in possess of the admission requirements must indicate the date by which they expect to obtain the qualification required.</p>														
Evaluation of candidates (Maximum score: 80 out of 80)	<p>- Evaluation of academic qualification and oral examination - Assessment of the English Language Knowledge (for Italian candidates only)</p> <p>Language for the examination: Italian or English</p> <p>The final score is given by summing the scores relative to the academic qualification and oral examination. These scores will be published within the section “Didattica” (“Dottorati di Ricerca”) of the web site of the University of Tuscia (www.unitus.it)</p> <p>Together with the application form, candidates should present a research project, within the themes given below for each curriculum, up to a maximum of 8000 characters, which must be written in Italian or English. The research project will be discussed during the oral exam.</p>														
Evaluation of academic qualification (Maximum score: 20 out of 80)	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Master’s thesis: max</td> <td style="text-align: right;">2 points</td> </tr> <tr> <td>University career (exams taken with the relative grades and final grade): max</td> <td style="text-align: right;">5 points</td> </tr> <tr> <td>Scientific publications relating to the areas of Ph.D.: max</td> <td style="text-align: right;">4 points</td> </tr> <tr> <td>Research and/or study activities in foreign institutions: max</td> <td style="text-align: right;">2 points</td> </tr> <tr> <td>Participation in research projects: max</td> <td style="text-align: right;">1 points</td> </tr> <tr> <td>Professional experiences and other qualifications that each candidate considers useful: max</td> <td style="text-align: right;">2 points</td> </tr> <tr> <td>Research project submitted by the candidate: max</td> <td style="text-align: right;">4 points</td> </tr> </table> <p>Before of the oral exam, the evaluation of academic qualification results will be published on the Tuscia web site www.unitus.it (section “Didattica” > “Dottorati di Ricerca”).</p>	Master’s thesis: max	2 points	University career (exams taken with the relative grades and final grade): max	5 points	Scientific publications relating to the areas of Ph.D.: max	4 points	Research and/or study activities in foreign institutions: max	2 points	Participation in research projects: max	1 points	Professional experiences and other qualifications that each candidate considers useful: max	2 points	Research project submitted by the candidate: max	4 points
Master’s thesis: max	2 points														
University career (exams taken with the relative grades and final grade): max	5 points														
Scientific publications relating to the areas of Ph.D.: max	4 points														
Research and/or study activities in foreign institutions: max	2 points														
Participation in research projects: max	1 points														
Professional experiences and other qualifications that each candidate considers useful: max	2 points														
Research project submitted by the candidate: max	4 points														
Evaluation of the oral exam	<p>Oral exam: maximum score 60 out of 80 points</p> <p>The minimum score for a positive oral exam will be at least 40 out of 80 points.</p>														

<p>Topics of the oral examination</p>	<p>Curriculum in <i>Food products.</i> The oral exam will be aimed at assessing the candidate's basic knowledge of the agro-food science, technology and biotechnology, and, specifically, will focus on the discussion of the research project presented by the candidate, which must be in line with one of the following themes:</p> <ul style="list-style-type: none"> i) Food-grade biocatalysts for oenological applications. ii) <i>In vitro</i> and <i>in vivo</i> study of foods formulated with new functional ingredients produced by highly innovative production technologies. <p>Curriculum in <i>Forest Ecology and environmental technologies</i> The oral exam will be aimed at assessing the candidate's basic knowledge of the forest ecology and environmental technologies with specific attention to the functionality, structure, bio-diversity, monitoring and management of forest and environmental resources; climate and global change mitigation and adaptation, forest resilience and restoration of degraded ecosystems. It will also focus on the discussion of the research project presented by the candidate, which must be in line with one of the following themes:</p> <ul style="list-style-type: none"> i) Analysis of the effect of standardization of eddy covariance measurement methodology on data quality and their use in synthesis studies at global level. ii) Development of a system to measure plant transpiration and of soil hydrology-hydraulics modules to improve simulations of the climate-ecosystems. iii) Ecosystem services in mixed <i>versus</i> pure forests: resilience to climate change iv) Monitoring land with semiautomatic classification from open remote sensing, for land cover multi-temporal mapping, supporting planning processes.
	<ul style="list-style-type: none"> v) Monitoring native and alien vegetation with remote sensing. vi) Ecosystem services from forests and wild areas in Italian inland areas. <p>Curriculum in <i>Biological systems/Bioindustries</i> The oral exam will be aimed at assessing the candidate's knowledge of basic biology and industrial biotechnology related to plant, animal and microbial systems, and, specifically, will focus on the discussion of the research project presented by the candidate, which must be in line with the following theme:</p> <ul style="list-style-type: none"> i) Microbial production of bioactive molecules. ii) Arsenic as a food chain contaminant: uptake, translocation and metabolism effects in horticultural plants (position with no scholarship).
<p>Exam dates and locations</p>	<p>Oral exam Date: October, 6th, 2017 Place: Aula Rotonda - Dipartimento per la Innovazione nei sistemi biologici, agroalimentari e forestali (DIBAF)</p>

	Via S. Camillo de Lellis snc - Viterbo Time: 10.30 a.m.
Contact to information	Head of the curriculum <i>Food Products</i> Prof. Fabio Mencarelli e-mail mencarel@unitus.it
	Head of the curriculum <i>Forest Ecology and Environmental Technologies</i> Prof. Marco Marchetti e-mail marchettimarco@unimol.it
	Head of the curriculum <i>Biological systems/ Bioindustries</i> Prof. Maurizio Petruccioli e-mail petrucci@unitus.it