PH.D. PROGRAM IN
SCIENCE, TECHNOLOGY AND BIOTECHNOLOGY FOR SUSTAINABILITY

Coordinator
Prof. Andrea Vannini

Department
Department for Innovation in Biological, Agrofood and Forest systems (DIBAF)

Program duration
3 years: 2nd January 2024 – 31st December 2026
Thesis Defence: within May 2027

Program objectives
The main aim of this PhD course is to provide high-quality training in research methods and prepare professional researchers for Universities, Research Institutions and Industries in three fields of research:
1) Food products (no positions open in this call);
2) Forest Ecology and environmental technologies;
3) Biological systems/ Bioindustries (no positions open in this call);

The research activities of the curriculum Forest ecology and environmental technologies will include the functionality and structure of forest systems, the soil system being included; forest biodiversity; monitoring and management of forest and environmental resources; the ecological recovery of degraded ecosystems; climate and global change mitigation and adaptation.

The teaching program is directed to provide students with skills in English language, statistical analysis of experimental data, bioeconomic, and assessment of the environmental sustainability of complex systems. In the positions open in this call a specific training is also organized in the context of the Research Infrastructures.

Positions with fellowship co-funded by public bodies and by DIBAF Department/University

no. 4 PhD scholarships co-funded by the Institute of Research on Terrestrial Ecosystems (IRET) of the National Research Council (CNR) in the framework of the ITINERIS project - Italian Integrated Environmental Research Infrastructures System

Curriculum Forest Ecology and environmental technologies

n. 2 scholarships co-funded by DIBAF
1. Topic: Development of new methods, tools, pipelines and software infrastructures for the quality evaluation and analysis of environmental data
Advisor: Prof. Giovanni Chillemi
Advisor: Prof. Nico Sanna

n. 1 scholarship co-funded by Agenzia Regionale per la Protezione dell’Ambiente (ARPA) Regione Autonoma Valle d’Aosta
2. Topic: Evaluation of the CO2 Absorption Capacity of Different Land Uses in the Alps
This fellowship requires a period of activities in Valle d’Aosta of at least 30 months.
Advisor: Prof. Dario Papale

n. 1 scholarship co-funded by UNITUS
3. Topic: Monitoring and analysis of ecosystems and related ecological processes
Advisor: Prof. Dario Papale
### Admission requirements
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:
- 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 timespan of which being no less than 4 years;
- a foreign university degree equivalent to those mentioned above.
Admission is also open to university students who will finish their MS degree by the scheduled enrolment date (29 December 2023). In this case, admission will be “conditional”; the applicants will send by mail (dottorati@unitus.it) 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.

### Evaluation candidates
**Evaluation of academic qualification and oral examination**
*Assessment of the English Language Knowledge (for Italian candidates only)*

Language for the examination: English

The final score is given by summing the scores relative to the academic qualification and oral examination. These scores will be published on the specific webpage of the PhD programmes.

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.

### Evaluation of academic qualification (Maximum score: 20 out of 80)

<table>
<thead>
<tr>
<th>Evaluation criteria</th>
<th>Maximum score</th>
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<tr>
<td>Master’s thesis and coherence with the Topic:</td>
<td>2 points</td>
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<tr>
<td>University career (exams taken with the relative grades and final grade):</td>
<td>3 points</td>
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<td>Scientific publications relating to the areas of Ph.D.:</td>
<td>2 points</td>
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<td>Participation to research projects:</td>
<td>2 points</td>
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<tr>
<td>Professional experiences and other qualifications that each candidate considers useful, including digital competences:</td>
<td>4 points</td>
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<tr>
<td>Research project submitted by the candidate:</td>
<td>7 points</td>
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The minimum score for a positive evaluation and admission to the oral exam will be at least 10 out of 20 points.

Before the oral exam, the evaluation of academic qualification results will be published on the specific webpage of the PhD programmes.

### Evaluation of the oral exam
Oral exam: maximum score 60 out of 80 points
The minimum score for a positive oral exam will be at least 40 out of 80 points.

### Topics of the oral examination
**Curriculum in Forest Ecology and environmental technologies**
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, biodiversity, 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 or more of the topics of the scholarships.
<table>
<thead>
<tr>
<th>Exam dates and locations</th>
<th>The exams will be held online between 18 and 22 December 2023. The date(s) of the interview will be published on the specific webpage of the PhD programmes by the deadline of the Application Call.</th>
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</thead>
<tbody>
<tr>
<td>Contacts to information</td>
<td>Prof. Dario Papale  e-mail  <a href="mailto:darpap@unitus.it">darpap@unitus.it</a></td>
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