



FOOD SCIENCE	
<b>CYCLE</b>	<b>XLII</b>
<b>COORDINATOR</b>	Prof. Massimiliano RINALDI email: <a href="mailto:massimiliano.rinaldi@unipr.it">massimiliano.rinaldi@unipr.it</a> Food and Drug Department
<b>DURATION</b>	3 years
<b>START DATE</b>	01/11/2026
<b>CURRICULA</b>	1. Food Science 2. Products for the food and health markets
<b>POSITIONS AVAILABLE</b>	<b>15</b>
<b>ADMISSION PROCEDURES</b>	Assessment of QUALIFICATIONS and Research Project Oral Exam in PRESENCE or REMOTELY
<b>ADMISSION REQUIREMENTS</b>	Regardless of age and citizenship, applicants may apply if they hold at least one of the following qualifications: <ul style="list-style-type: none"><li>• a Master's degree (Laurea Magistrale or equivalent);</li><li>• a degree awarded under the previous Italian system;</li><li>• an equivalent academic qualification obtained abroad, recognized as suitable for admission to the PhD programme.</li></ul> Applicants who have not yet graduated may also apply, provided that they obtain their degree by <b>31 October 2026</b> .
<b>TRAINING OBJECTIVES</b>	
<p>The PhD course in Food Science aims to train highly skilled professionals, able to face current and future challenges in the agri-food sector. The training plan is designed in alignment with the Next Generation EU strategy. The high-level training courses are accompanied by a dedicated program in the following areas:</p> <ul style="list-style-type: none"><li>• Circular bioeconomy;</li><li>• Sustainable and precision agriculture;</li><li>• Innovative and sustainable production;</li><li>• Sustainability from a nutritional perspective;</li><li>• valorization and upcycling of by-products.</li></ul> <p>These areas of study are complemented by cross-cutting expertise essential to support innovation, including the use of big data and artificial intelligence methodologies.</p> <p>Throughout the doctoral cycle, candidates also participate in high-level courses dedicated to entrepreneurship and exploitation of inventions, thanks to the collaboration with the regional ART-ER structure.</p> <p>The program places strong emphasis on skill integration, multi-, inter- and transdisciplinary training and internationalization, through PhD students' participation in international research projects and interaction with leading foreign experts by dedicated seminars and meetings.</p> <p>Additionally, PhD students are encouraged to take part in public engagement initiatives and interaction with the territory, to develop skills of knowledge transfer and dialogue with all stakeholders in the food system.</p>	



## RESEARCH AREAS

1. **HUMAN NUTRITION:** Deciphering inter-individual variability in the metabolism of and cardiometabolic responses to plant bioactives through deep phenotyping and machine learning approaches;
2. **FOOD CHEMISTRY/FOOD TECHNOLOGY:** Structure-function design of tailored insoluble fibers from agri-food by-products as novel food texturizing ingredients;
3. **FOOD MICROBIOLOGY:** Fermentation, bioactive components and intestinal microbiota: functional valorization of cheeses and other fermented foods;
4. **FOOD MICROBIOLOGY** Lactic acid fermentation for the development of innovative plant-based foods and ingredients using integrated biological platforms;
5. **PLANT PRODUCTION:** Integrated biostimulation, phenotyping and gene expression analysis approaches in a controlled environment, under optimal and stress conditions, for improving plant performance and production;
6. **CHEMISTRY AND BIOTECHNOLOGY OF FERMENTATION:** Development and optimization of fermentation processes;
7. **HUMAN NUTRITION:** Empowering families to mediterranean healthy and sustainable dietary patterns during the perinatal period through a community-level multicomponent approach;
8. **HUMAN NUTRITION:** Shifting toward Healthy and sustainable diets for safer, greener and inclusive cities;
9. **FOOD TECHNOLOGY:** Designing Algae–Legume–Based Fish Alternatives: Linking Structure and Nutritional Quality;
10. **FOOD CHEMISTRY:** Untargeted analysis methodologies for mapping emerging fungal metabolites in durum wheat;
11. **ORGANIC CHEMISTRY:** Determination of significant allergens in the wheat supply chain and further evaluation of the effects of processing;
12. **ANIMAL SCIENCE:** Data-driven modelling of quality and sustainability in milk-to-cheese supply chains;
13. **FOOD TECHNOLOGY:** Study and development of innovative functional ingredients for the design and optimization of industrial ice cream.

## Position with Scholarship





N°	Funding entity	Research Topic or Areas
3	University of Parma (Ministerial funds, University funds and Cariparma Foundation)	<ul style="list-style-type: none"> <li>• HUMAN NUTRITION: Deciphering inter-individual variability in the metabolism of and cardiometabolic responses to plant bioactives through deep phenotyping and machine learning approaches;</li> <li>• FOOD MICROBIOLOGY: Fermentation, bioactive components and intestinal microbiota: functional valorization of cheeses and other fermented foods;</li> <li>• FOOD CHEMISTRY/FOOD TECHNOLOGY: Structure-function design of tailored insoluble fibers from agro-food by-products as novel food texturizing ingredients</li> </ul>
2	Fully funded by Cariparma Foundation	<ul style="list-style-type: none"> <li>• PLANT PRODUCTION: Integrated biostimulation, phenotyping and gene expression analysis approaches in a controlled environment, under optimal and stress conditions, for improving plant performance and production);</li> <li>• FOOD MICROBIOLOGY: Lactic acid fermentation for the development of innovative plant-based foods and ingredients using integrated biological platforms</li> </ul>

## Position with Scholarship

### LINKED TO SPECIFIC TOPICS (art. 6 of the Competition notice)

N°	Funding entity	BOUND RESEARCH TOPIC
1	partially funded by University and Cariparma Foundation funds and co-funded by the Food and Drug Department (funds Project ALIFAR_DIP_ECCELLENZA_2023_2027_	CHEMISTRY AND BIOTECHNOLOGY OF FERMENTATION Development and optimization of fermentation processes



	INFRA BERTIN CUP: D98H22002100001) 	
1	funded by Food and Drug Department (funds Project PANACEA PRIMA Call 2025 – Section 1 – FOOD VALUE CHAIN IN THE NEXUS CUP: D93C26000280006)   Co-funded by the European Union	HUMAN NUTRITION Empowering families to mediterranean healthy and sustainable dietary patterns during the perinatal period through a community-level multicomponent approach
1	funded by Food and Drug Department (funds Project SHADES (PRIMA Call 2025 – Section 1 – FOOD VALUE CHAIN IN THE NEXUS) CUP: D93C26000260006)   Co-funded by the European Union	HUMAN NUTRITION Shifting toward Healthy and sustainable diets for safer, greener and inclusive cities
1	funded by Food and Drug Department (funds Project MEDALP (PRIMA Call 2025 – RIA/IA CUP: D93C26000120005)   Co-funded by the European Union	FOOD TECHNOLOGY Designing Algae–Legume Based Fish Alternatives: Linking Structure and Nutritional Quality
1	funded by Food and Drug Department (funds Project V Bando MASAF/ISMEA PNRR M2C1 – I 3.4. Programma ID 226 CUP: B99I21000540001)  Finanziato dall'Unione europea NextGenerationEU   	FOOD CHEMISTRY Untargeted analysis methodologies for mapping emerging fungal metabolites in durum wheat
1	funded by Food and Drug Department (funds Project V Bando MASAF/ISMEA PNRR M2C1 – I 3.4. Programma ID 226 CUP: B99I21000540001)  Finanziato dall'Unione europea NextGenerationEU   	ORGANIC CHEMISTRY Determination of significant allergens in the wheat supply chain and further evaluation of the effects of processing
1	Funded by The Italian National Research Council C.N.R. - IBBA	ANIMAL SCIENCE Data-driven modelling of quality and sustainability in milk-to-cheese supply chains
1	Scholarship co-funded by the Company “Fondazione Edmund Mach” and co-funded by the Company Soremartec Italia S.r.l.	FOOD TECHNOLOGY Innovative ingredients for ice cream production
<b>POSITION RESERVED</b>		
Industrial PhD reserved for employees of the Company Centro di Sperimentazione Laimburg (with salary maintained)		<b>2</b>

## ADMISSION ASSESSMENT

**Assessment of QUALIFICATIONS:** up to 50 points  
(a minimum score of 30 points shall be required to be admitted to the Oral Exam)  
**ORAL EXAM:** up to 70 points  
**Minimum score for ELIGIBILITY:** 70/120



## ORAL EXAM PROGRAM

**THE ORAL EXAM TAKES IN THE PRESENCE** and with the possibility of carrying out the interview **REMOTELY** for candidates residing abroad or temporarily abroad for study / work reasons. To this end, candidates must submit **a motivated REQUEST** as per the model attached to the competition announcement)

The ORAL test involves the presentation and discussion of the research project by the candidate without the aid of any Powerpoint presentation or other applications, and is aimed at verifying the candidate's aptitude for scientific research and his/her general preparation on topics relating to research topics of the doctoral course.

### Foreign Language

the fluency of which shall be assessed during the Oral Exam

**ENGLISH**

The evaluation of the knowledge of this language will be oral and will consist in reading and translating of a scientific test.

For foreign candidates, basic knowledge of **ITALIAN LANGUAGE** will also be assessed.

## SCHEDULE OF THE ADMISSION EXAMS

### ASSESSMENT OF QUALIFICATIONS

It is the candidate's responsibility to verify the outcome of the evaluation of qualifications, which can be consulted in their reserved area by connecting to the page <http://unipr.esse3.cineca.it/Home.do> in the days preceding the date of the Oral Exam

### ORAL EXAM

#### DATE

3<sup>rd</sup> September 2026 (with possible extension in the following days)

#### TIME

09:30 am (Italian Time)

#### PLACE

ROOM A  
PHARMACY BUILDING  
Food and Drug Department  
Parma Area della Scienze, 27/A - Campus  
43124 PARMA - ITALY

### FURTHER INFORMATION

**The choice of the Research Topic to be expressed in Annex A is not binding on the assignment of the research project, and it is intended to assess candidates skills during the admission exam. The PhD research topic will be assigned by the Academic Board.**

#### THE INTERVIEW MAY BE HELD ALSO IN ENGLISH

For foreign candidates it is possible to carry out the admission examination exclusively in English. For Italian candidates it will be possible to take the admission examination in Italian or in English at the candidate's choice

## LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT

### MANDATORY DOCUMENTS TO BE ATTACHED TO THE ON-LINE APPLICATION

#### ANNEX A

(art. 3.2 of the Competition notice)

#### Identification Document

Scanned Copy of a valid identity document with photo (i.e. identity card, passport)

#### Curriculum Vitae et studiorum

No specific CV format is required (see art. 3.2 of the Competition notice)

#### Abstract of degree thesis

Abstract of the second cycle master's degree thesis. Undergraduate applicants must submit the draft of the thesis approved by their supervisor (abstract/draft of the thesis: 10.000 characters including spaces)



<b>Academic 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. 3.2 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>	<p>The research project shall consist of a maximum of 2 pages, be written in English, according to the format attached to the competition notice.</p> <p>It will have to focus on an original research topic (<b>unpublished, developed personally by the candidate, PENALTY NOT EVALUATION. It should be noted that the Examination Board can use of IT tools useful for verifying the originality of the submitted Project</b>), concerning one of the specific topic indicated in this notice and it shall be structured as follows: introduction of the problem in the scientific context, significance of the problem, expected results, argumentation.</p> <p>In accordance with the <a href="#">Guidelines for the responsible use of Artificial Intelligence in education and research</a>, the candidates must explicitly state whether they have used Generative Artificial Intelligence systems in the production of the research proposal attached to their application form, specifying which tools were used and for which parts of the document. During the oral examination, the Admission Board will assess the candidate's full mastery of the content included in the document and their ability to justify the methodological and scientific choices made in the project.</p> <p><u>The research proposal <b>does not constitute a binding commitment</b> for the subsequent choice of the PhD research topic, which will be assigned by the Academic Board</u></p> <p><b>Failure to submit the research proposal will result in exclusion from the selection procedure.</b></p>	
<b>LIST OF EVALUABLE QUALIFICATIONS</b> (only qualifications attested by a document drawn up in Italian or in English)		
<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 20 points</b>
<b>Research Project</b>	Points relating to the research project shall be allocated on the basis of the following criteria: <ul style="list-style-type: none"> <li>○ Scientific value and or originality of the proposal: max 10 points</li> <li>○ description and structure of the proposal: max 5 points</li> <li>○ proposal feasibility: max 5 points</li> </ul>	<b>Up to 20 points</b>
<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>Up to 2 points</b>
<b>Scientific Publications</b>	Articles and/or reviews in scientific journals with peer reviewing, scientific book chapters with national or international circulation. The explicit indication of the candidate's contribution to the works presented for evaluation is a necessary requirement. International peer-reviewed papers: up to 2 points National peer-reviewed papers: up to 1 point	<b>Up to 3 points</b>
<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>Up to 2 points</b>



<p><b>Other experiences (training, work, research, teaching, etc.)</b></p>	<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>	<p><b>Up to 3 points</b></p>
<p><b>EVALUATION ORAL EXAM</b></p>		
<p><b>Interview Program</b></p>	<p><b>Evaluation CRITERIA</b></p>	<p><b>POINTS</b></p>
<p><b>The ORAL EXAM</b> includes the presentation 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 PhD course</p>	<ul style="list-style-type: none"> <li>○ English reading and speaking and for foreign candidates also Italian language: up to 10 points</li> <li>○ research project presentation: max 40 points</li> <li>○ general knowledge of issues connected to the PhD course: max 20 points</li> </ul>	<p><b>Up to 70 points</b></p>