




FOOD SCIENCE	
CYCLE	XL
COORDINATOR	Prof. Massimiliano RINALDI email: massimiliano.rinaldi@unipr.it Food and Drug Department
DURATION	3 years
STARTING DATE OF THE PHD PROGRAM	01/11/2024
CURRICULA	1. Food Science 2. Products for the food and health markets
POSITIONS PUT OUT TO COMPETITION	18 (Modified with Rector Decree n. 1672 of 17.07.2024)
ADMISSION PROCEDURES	Assessment of QUALIFICATIONS and Research Project Oral Exam in PRESENCE or REMOTELY
ADMISSION REQUIREMENTS	Regardless of age and citizenship, applicants holding at least one of the following academic qualifications can apply for admission: <ul style="list-style-type: none"> – Laurea specialistica or Laurea magistrale (second cycle master's degree) – Laurea Vecchio Ordinamento (degree obtained under the previous Italian regulations); – Second cycle Master's degree obtained abroad, equivalent to the above mentioned Italian degrees and recognized as suitable for the admission to doctoral program Undergraduates can also apply for admission to the selection, with the obligation to obtain the degree by 31.10.2024
TRAINING OBJECTIVES	
<p>The Ph.D. Course in Food Science is offered by the Department of Food and Drug, University of Parma. The focus of the programme is the 3-years PhD research project (setting up, planning and performing research, then writing it up and presenting it), which leads to a thesis and associated publications. The research is done under the supervision of a member of the PhD Course Board.</p> <p>The PhD Course in Food Science aims at organising the training of PhD candidates to become self-reliant, societal skilled researchers in the field of fundamental and applied research on food science. The PhD Course in Food Science is designed to cover all the step along the food supply chain, “from the farm to the fork”, to address cutting-edge topics (i.e. local food systems, circular bioeconomy, human microbiome, and dietary patterns), and to provide the candidates with the knowledge required to tackle the next-to-come challenges in food quality and safety.</p> <p>The research portfolio, based on a strong interdisciplinary environment, is mainly composed of the work done within the Department of Food and Drug in the following areas: Food microbiology, Food technology and processing, Human nutrition, Plant production and animal science, Food chemistry and circular bioeconomy, Agro-economy, consumer's science, and food systems, Computational Food Chemistry</p>	
RESEARCH AREAS	
<ol style="list-style-type: none"> 1. FOOD TECHNOLOGY – FOOD BIOCHEMISTRY: Modifying techno-functional properties and biological activity of plant proteins by technologies 2. FOOD TECHNOLOGY: Upcycling pea waste side streams for developing future food ingredients 3. PLANT PRODUCTION – FOOD MICROBIOLOGY – FOOD TECHNOLOGY – FOOD CHEMISTRY: Innovation in the elicitors production for the agricultural sector 4. PLANT PRODUCTION – FOOD TECHNOLOGY: Innovation in the utilisation and stabilisation of by-products from the agri-food chain 5. PLANT PRODUCTION – FOOD MICROBIOLOGY - FOOD CHEMISTRY: Green solutions from secondary metabolite extraction from <i>vitro</i>-derived plantlets 6. HUMAN NUTRITION: Unravelling metabolized and non metabolized flavan-3-ols at colonic level using multiple chromatographic tools 	

7.	HUMAN NUTRITION: Integrating multiple datasets to guide the provision of effective strategies to promote cardiometabolic health through plant-based diets
8.	HUMAN NUTRITION – Nutritional needs of lung cancer patients: assessment of nutritional status for planning new interventions of personalized nutrition
9.	(HUMAN NUTRITION: Sport nutrition - eating habits, nutritional status in different sport disciplines
10.	FOOD MICROBIOLOGY: Exploiting lactic acid fermentation for the detoxification of products/by-products to employ in the food chain
11.	ANIMAL PRODUCTION: The use of Fourier Transform Infrared Spectroscopy as a rapid and reliable tool to analyze milk quality and safety, improving the discriminatory capabilities of spectra through the implementation of innovative statistical models
12.	FOOD CHEMISTRY: Extraction and characterization of biomolecules from insects reared on food by-products for food and feed applications
13.	FOOD CHEMISTRY: Development and application of untargeted methods and omics approaches for the characterization of raw materials and semi-finished products in the confectionery industry
14.	FOOD CHEMISTRY: Development of advanced analytical methodologies for the characterization of new fibre-based food ingredients
15.	ORGANIC CHEMISTRY – FOOD TECHNOLOGY: Milk proteins in confectionary industry: study of the chemical-physical features and bio-functional properties

Position with Scholarship		
N°	Funding entity	Research Topic, if any
3	Scholarship funded by University of Parma (Ministerial funds)	<ul style="list-style-type: none"> Food Technology / Biochemistry Animal Production Human nutrition
1	Scholarship co-funded by Fondazione Cariparma	<ul style="list-style-type: none"> Food Microbiology

Position with Scholarship LINKED TO SPECIFIC TOPICS (art. 6 of the Competition notice) *Modified with Rector Decree n. 1672 of 17.07.2024)		
N°	Funding entity	BOUND RESEARCH TOPIC
1	Scholarship funded by Food and Drug Department (funds of "Departments of Excellence" program)	Unravelling metabolized and non metabolized flavan-3-ols at colonic level using multiple chromatographic tools
1	Scholarship funded by Food and Drug Department (funds deriving from MASAF within the programs admitted to evaluations and presented pursuant to Notice no. 0182458 of 04.22.2022)	Application of circular economy principles in the brewing supply chain through a multidisciplinary approach to produce innovative food and beverages
1	Scholarship funded by Food and Drug Department (funds Project MUR FARE CARE-DIET (CARDIOMETABOLIC REsponse to plant-based DIETs at individual level: deciphering the complexity of plant bioactives CUP D93C22001060001)	Integrating multiple datasets to guide the provision of effective strategies to promote cardiometabolic health through plant-based diets
1	Scholarship partly financed with UNIVERSITY funds and co-financed by Food and Drug Department (funds Project PRIN 2022 PNRR "BIOactive compounds from <i>vitro</i> -derived HOP plants: a green opportunity – BIOSHOP" CUP D53D2301168006)	A green approach to the synthesis and extraction of bioactive compounds from <i>vitro</i> -derived hop plantlets

1	Scholarship partly financed with UNIVERSITY funds and co-financed by Food and Drug Department (funds Project PRIN 2022 "Upcycling pea waste side streams for developing future food ingredients (UPea)" CUP D53D2301152006)	Upcycling pea waste side streams for developing future food ingredients
1	Scholarship funded by Interdepartmental Microbiome Research Center "Microbiome Research Hub" (funds Project HE EIC Pathfinder Precision Nutrition: MENTORING: "assessing malnutrition and metabolic health in non-communicable diseases through precision Nutrition: impact in quality of life and prognosis of lung cancer patients")	Nutritional needs of lung cancer patients: assessment of nutritional status for planning new interventions of personalized nutrition
1	Scholarship partly financed with UNIVERSITY funds and co-financed by SITEIA Interdepartmental Center	Extraction and characterization of biomolecules from insects reared on food by-products for food and feed applications
1	Scholarship funded by SOREMARTEC Italia S.r.l.	Development and application of untargeted methods and omics approaches for the characterization of raw materials and semi-finished products in the confectionery industry
1	Scholarship funded by EMILIA ROMAGNA REGION CUP D92J24000010002 	Processing and valorisation of agri-food by-products and their use as elicitors in agriculture (Acronym: Tra.Va.So.)
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 630/2024) and co-financed by the Company SOREMARTEC Italia S.r.l. CUP D92J24000310004 	Milk proteins in confectionary industry: study of the chemical-physical features and bio-functional properties.
1	Scholarship co-financed with funds under the PNRR - Mission 4 component 2 (Ministerial Decree 630/2024) and co-financed by the Company SOREMARTEC Italia S.r.l. CUP D92J24000310004 	Development of advanced analytical methodologies for the characterization of new fibre-based food ingredients
1	Scholarship funded by Eni S.p.A.	Study on the variation of the physico-chemical soil parameters and of the vegeto-productive parameters of agriculturally relevant crops, after the use biochar as a soil improver

POSITION RESERVED	
Reserved to Holders of SCHOLARSHIP FUNDED BY FOREIGN STATES (Ethiopia)	1
Reserved to Holders of RESEARCH GRANT within the Project MARIE SKŁODOWSKA-CURIE ACTIONS – COFUND "Training Future Big Data Experts for Europe (FutureData4EU)"	1

ADMISSION PROCEDURES

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

2nd September 2024 (with possible extension to 3rd September 2024)

TIME

10:30 am (Italian Time)

PLACE

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)	
Academic Qualifications	Certificates and academic transcript of records for both Bachelor’ and Master’ degrees 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).	
Research Project	The research project shall consist of a maximum of 2 pages, be written in English, according to the format attached to the competition notice. It will have to focus on an original research topic (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), 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. <u>It does not represent a constraint with respect to the following choice of the doctoral thesis, which will be assigned by the Academic Board</u>	
LIST OF EVALUABLE QUALIFICATIONS (only qualifications attested by a document drawn up in Italian or in English)		
Curriculum Vitae et studiorum	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.	Up to 20 points
Research Project	Points relating to the research project shall be allocated on the basis of the following criteria: <ul style="list-style-type: none">○ Scientific value and or originality of the proposal: max 10 points○ description and structure of the proposal: max 5 points○ proposal feasibility: max 5 points	Up to 20 points
Statement of Research Interest	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	Up to 2 points
Scientific Publications	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	Up to 3 points
Other Academic qualifications	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	Up to 2 points
Other experiences (training, work, research, teaching, etc.)	<ul style="list-style-type: none">– 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– Working activity– Professional and/or training internship	Up to 3 points

	<ul style="list-style-type: none"> – Language proficiency certificates – Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes) – Other qualifications attesting the suitability of the applicants (scholarships, awards, etc.) 	
LIST OF QUALIFICATIONS TO BE SUBMITTED AND THEIR ASSESSMENT Positions reserved to holders of scholarship funded by Foreign States		
Curriculum Vitae et studiorum	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.	Up to 20 points
Research Project	Congruence with the research topics of the PhD course. Clarity of objectives and definition of success indicators. Implementation and sustainability of the feasibility plan.	Up to 20 points
Statement of Research Interest	Originality and motivation to the research.	Up to 2 points
Scientific Publications	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	Up to 3 points
Other Academic qualifications	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	Up to 2 points
Other experiences	<ul style="list-style-type: none"> – 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 – Working activity – Professional and/or training internship – Language proficiency certificates – Periods of study abroad, outside the country of origin (e.g. Erasmus programme or other similar mobility programmes) Other qualifications attesting the suitability of the applicants (scholarships, awards, etc.)	Up to 3 points
EVALUATION ORAL EXAM		
Interview Program	Evaluation CRITERIA	POINTS
The ORAL EXAM 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	<ul style="list-style-type: none"> ○ English reading and speaking and for foreign candidates also Italian language: up to 10 points ○ research project presentation: max 40 points ○ general knowledge of issues connected to the PhD course: max 20 points 	Up to 70 points