

PhD Programme table 37th cycle – PON Call for application “Ricerca e Innovazione” 2014 – 2020



UNIONE EUROPEA
Fondo Sociale Europeo



PROGRAMME'S NAME	ARCHITECTURE AND DESIGN CULTURE
DURATION	3 years
PROGRAMME START DATE	01/01/2022
LANGUAGE	Italian, English
COORDINATOR	Prof. Annalisa Trentin (annalisa.trentin@unibo.it)
CURRICULA	N/A
RESEARCH TOPICS	Detailed list at the bottom of the present document
PhD POSITIONS	4
ADMISSION PROCEDURE	Qualifications and research proposal evaluation

Available Positions and Scholarships

Actions	Pos. n.	Financial Support	Research topic
Action IV.4 “PhDs on innovation topics”	1	PhD Scholarship	Microclimate in cultural places. Technological innovation for the improvement of the fruition and the preservation of cultural heritage
Action IV.5 “PhDs on green topics”	2	PhD Scholarship	Data-driven planning and design of healthy and just urban historical city areas
	3	PhD Scholarship	Sustainable design driven innovation in the territorial packaging system
	4	PhD Scholarship	Vertical farming: architectural design and urban strategies

Required and Supporting Documents to be attached to the application

(only documents in Italian, English, French, German and Spanish shall be considered as valid and be assessed by the Admission Board)

Only qualifications obtained during the last 5 calendar years shall be taken into consideration, except for the University Degree. **The Admission Board will assess the relevance of the supporting documents to the criteria listed in Art. 3 of the Ministerial Decree 1061/2021 (see also Art. 4 of the Call for applications).**

REQUIRED DOCUMENTS	
Identity document	Valid identity document with photo (i.e. identity card, passport)
Curriculum Vitae	No specific CV format is required
Degrees	Documents attesting the awarding of the first and second cycle degrees, the exams taken and the marks obtained (see Art. 3 of the Call for Applications)
Research proposal	Multi-annual research proposal, with special emphasis on the activities to be completed during the first-year course. The proposal must meet the following requirements: <ul style="list-style-type: none"> - it cannot exceed 20,000 characters, including spaces and formulas, if present. This figure does not include: the title, the outline, references and images (such as graphs, diagrams, tables etc. - where present);

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	<ul style="list-style-type: none"> it must be written following the templates provided for Action IV.4 “PhDs on innovation topics” and Action IV.5 “PhDs on green topics”. The templates are attached to the Call for Application and available for download on the University website.
SUPPORTING DOCUMENTS	
Publications	Lists of publications (i.e. monographs, articles on scientific journals), minor publications (conference papers, etc.), abstracts and posters presented during national and international conferences, etc.

Evaluation criteria

The **results of the admission exams** will be available **from 03/11/2021** on [Studenti Online](#) (select “summary of the requests in progress” > “see detail” and open the .pdf file at the bottom of the page). **No personal written communication will be sent to applicants concerning the examinations results.**

Scores will be expressed in points out of 100, as follows.

Minimum score for eligibility: 60 points, Maximum score: 100 points

Qualifications evaluation	University degree final mark. Graduands shall be evaluated according to the Weighted Average Mark (WAM)	10 points max
	Publications	10 points max
Research proposal evaluation		80 points max

Research Topics

n. 1 - INNOVATION

Thematic area SNSI 2014-20	Tourism, cultural heritage and creative industry Development trajectory: Technologies and applications for conservation, management and enhancement of cultural, artistic and landscape heritage
PNR 2021-2027*	Research field: 5.2 Humanities, creativity, social transformation, inclusive society Area of application: 5.2.1 Cultural heritage Section 1. Digitalization of protection, conservation, and enhancement processes
Project title	Microclimate in cultural places. Technological innovation for the improvement of the fruition and the preservation of cultural heritage
Project description	The proposal aims to systemize different needs through the control of the microclimate: the contrast to the spread of contagion; the reduction of risks to the cultural heritage from polluting factors. Passing through the reorganization of the processes of admission to the institutes and cultural places, the aim is to respond to the needs related to the health of people and the conservation of the works of art contained. The parameters that determine the quality of the air (T, RH, dust also pollutants, concentration of CO2 and other gas components, etc...) affect the state of conservation of the works of art contained in it, while their interactions with the spread of the epidemic are yet to be verified. In this sense, the development of technological strategies to carry out surveys and microclimatic control can have positive effects not only in improving the preservation of cultural heritage, but also suggesting different ways to enjoy the places of culture, also contributing to the containment of contagion in case of pandemic.
Mandatory traineeship	6 months
Company type	The company works in the field of equipment and gear for eco-green environmental sanitation.
Stay abroad	NO

n. 2 - GREEN

Thematic area SNSI 2014-20	Digital agenda, smart communities, smart mobility systems Development trajectory: Systems for urban environment safety, environmental monitoring and prevention of critical events or risks
PNR 2021-2027*	Research field: 5.5 Climate, energy, sustainable mobility Area of application: 5.5.2 Climate change, mitigation and adaptation
Project title	Data-driven planning and design of healthy and just urban historical city areas
Project description	The research aims at investigating and understanding the relations between citizens wellbeing and urban and environmental features (such as urban morphology, urban climate and pollution, Green and Blue Infrastructure (GBI), socio-economic characteristics) through the application of data-driven approaches applied to the urban dynamics. This will allow to highlight the role of big data and artificial intelligence for supporting sustainable urban development and transition and thus for planning healthier and more just cities of tomorrow.
Mandatory traineeship	6 months
Company type	Development and selling of products and services based on environmental and geospace Big Data analysis – with a focus on satellite data – for environment monitoring purposes, soil usage, and climate change
Stay abroad	6 months

n. 3 - GREEN

Thematic area SNSI 2014-20	Smart and sustainable industry, energy and environment Development trajectories: Innovative, highly efficient production processes for industrial sustainability, Evolutionary and adaptive production systems for customised production, Innovative and environmentally friendly materials Health, nutrition, quality of life Development trajectory: Systems and technologies for packaging, preservation and traceability and safety of food production Digital Agenda, Smart Communities, Smart Mobility Systems Development trajectory: “Embedded” electronic systems, smart sensor networks, internet of things
PNR 2021-2027*	Research field: 5.2. Humanities, creativity, social transformation, inclusive society Area of application: 5.2.4 Creativity, design and Made in Italy Section 3. Systemic sustainability of products, processes, services Section 5. Territories and Made in Italy enhancement Research field: 5.4. Digital, industry, and aerospace Area of application: 5.4.1 Digital transition – i4.0 Section 2. Sustainable communities Section 4. Heterogeneous systems Research field: 5.4. Digital, industry, and aerospace Area of application: 5.4.6 Innovation in the manufacturing industry Section 1. Circular, clean, and efficient industry Section 2. Inclusive industry Section 3. Smart industry Section 4. Resilient industry Section 5. Competitive industry Research field: 5.5. Climate, energy, sustainable mobility Area of application: 5.5.2 Climate change, mitigation and adaptation Section 4. Understanding, evaluation and prediction of climate change impact on natural and built environments, health, wellness and society bond Section 9. Education and scientific disclosure on climate change

	<p>Research field: 5.6. Food products, bioeconomy, natural resources, agriculture, environment</p> <p>Area of application: 5.6.2 Science and food technologies</p> <p>Section 6. Emerging trends in food technologies and transformation process improvement</p>
Project title	Sustainable design driven innovation in the territorial packaging system
Project description	<p>Our region is defined as Packaging Valley because of its high concentration of companies involved in the packaging supply chain, which represent excellence in Italy and Europe for the sector. We are developing a Packaging Innovation Observatory, which has research into sustainability, inclusiveness and responsible design as one of its main areas of commitment.</p> <p>By aggregating and re-elaborating knowledge, researching good practices in a predictive logic, and hybridising project skills between universities, students and companies, it aims to trigger and multiply innovation. The aim is to develop cross-disciplinary research, in collaboration with leading companies in the sector, that can account for the evolution of the relationship with the end user, innovative value chains and the use of innovative materials that can be used in sectors with a high use of packaging - e-commerce, food & beverage, tobacco, pharmaceuticals -.</p>
Mandatory traineeship	1 or 2 terms of different academic years
Company type	Industrial machinery for packaging automation
Stay abroad	6 months

n. 4 - GREEN

Thematic area SNSI 2014-20	<p>Digital agenda, smart communities, smart mobility systems</p> <p>Development trajectory: Technologies for smart building, energy efficiency, and environmental sustainability</p> <p>Smart and sustainable industry, energy and environment</p> <p>Development trajectory: Innovative, highly efficient production processes for industrial sustainability</p>
PNR 2021-2027*	<p>Research field: 5.2 Humanities, creativity, social transformation, inclusive society</p> <p>Area of application: 5.2.5 Social transformation, inclusive society</p> <p>Section 12. Strategies and tools for urban regeneration and territorial governance</p>
Project title	Vertical farming: architectural design and urban strategies
Project description	<p>The project aims to develop innovative solutions regarding architectural and urban design focusing on the theme of vertical farming and combining technologies aimed at reducing the environmental impact of crops with the theme of urban regeneration. The expected results consist in the identification of architectural solutions and strategies at the urban scale that, using new technologies of indoor cultivation, contribute to the reduction of land consumption, including through the recycling and reuse of abandoned buildings in urban and industrial contexts.</p>
Mandatory traineeship	6 months
Company type	Technological company working in the field of aeroponic cultivation within the vertical farm
Stay abroad	NO

*the translation of PNR 2021-2027 has been carried out by the PhD Unit