

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



UNIONE EUROPEA
Fondo Sociale Europeo



PROGRAMME'S NAME	LAW, SCIENCE AND TECHNOLOGY
DURATION	3 years
PROGRAMME START DATE	01/01/2022
LANGUAGE	English
COORDINATOR	Prof.ssa Monica Palmirani (monica.palmirani@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	Digital platforms and user empowerment in EU private law
Action IV.5 “PhDs on green topics”	2	PhD Scholarship	Sociological-legal instruments for the analysis of environmental crime phenomena (ecomafie)
	3	PhD Scholarship	Legimatics and AI tools for the monitoring of EU legislation in agrifood and SDGs
	4	PhD Scholarship	Analyses of AI-supported collective decision oriented towards sustainable goals (theoretical and legal perspectives)

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	CV must be written in English
Degrees	Documents attesting the awarding of the first and second cycle degrees (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:

AFORM Settore Dottorato di ricerca

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	<ul style="list-style-type: none"> - it cannot exceed 10.000 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); - 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
Other documents	<ul style="list-style-type: none"> - Language proficiency certificates (English and other languages) - Academic and/or professional teaching activities

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	Graduation final mark. Graduands shall be evaluated on the basis of the Weighted Average Mark (WAM)	10 points max
	Publications and academic and/or professional teaching activities	10 points max
	Other documents: Language proficiency certificates	5 points max
Research proposal evaluation		75 points max

Research Topics

n. 1 - INNOVATION

Thematic area SNSI 2014-20	Smart and sustainable industry, energy and environment <i>Development trajectories:</i> 1. Innovative, highly efficient production processes for industrial sustainability
PNR 2021-2027	Climate, energy, sustainable mobility – Section 2: Accessible, eco-friendly, smart and safe, resilient and efficient mobility infrastructure
Project title	Digital platforms and user empowerment in EU private law
Project description	With the proliferation of digital platforms, the data protection undergoes pressures for commercial or propaganda purposes with effects that strongly impact not only the personal data, but more extensively the freedom and autonomy of thought and the right to information, with the result of infringing a broader right developed by the legal literature as the “informational self-determination”, that is the right of the individual to decide how to create relationship between the proper personal sphere and third parties. The activities carried out by the digital platforms (database, search engine, virtual shops, e-mail, social network, but also cloud/storage services and lastly services related to “internet of things”) in the collection, but even more in the processing of data through the employment of sophisticated artificial intelligence systems, allow to extract additional information, process the results with exceptionally high degree of certainty capable of determine business models and markets, scientific uses of this digital knowledge to an extent as to shape collective behavior. The research will focus on the current EU regulation (Reg. (EU) 2016/679) and on the adequacy of the contemplated protections in respect to the development of new technologies. The current regulatory approach is based on the free and informed self-determination of the individual to allow third parties the access to his own data and to maintain the control of them, as well as the power of intervention. The research will study if, in a

	reality increasingly dominated by the technological instruments, the choice of a regulatory technique that even for a high number of treatments focuses on the self-determination of the individual, can be qualified as realistic, efficient and sufficient in respect to protection purposes. In this regard, the legal systems established in societies where the new technologies have already reached a more widely spread diffusion, as for example the Asian countries (China, South Korea and Japan) and United States, will also be considered. In case of deficiencies in respect to the future development of digital platforms, it will be analyzed the possibility – de jure condito – of applying the competition law (considered the great polarization of the operators of the c.d. Big Tech) and the consumer law (qualifying the extensive use of Big Data among the aggressive commercial practices) in order to safeguard the rights of the individual and the related economic value, as well as, de jure condendo, the additions to the law desirable in this perspective.
Mandatory traineeship	6 months
Company type	Consortium of logistics operators
Stay abroad	6 months (destination: China)

n. 2 - GREEN

Thematic area SNSI 2014-20	Digital Agenda, Smart Communities, Smart Mobility Systems <i>Development trajectories:</i> 1. Systems for urban environment safety, environmental monitoring and prevention of critical events or risks
PNR 2021-2027	5.2.5 Social transformations and the inclusion society Section 6. Urban welfare, public city and rights Section 12. Strategies and tools for urban regeneration and territorial government 5.3.2 Security of natural systems Section 4. Governance and management of natural risks and anthropogenic impacts 5.4.1 Digital transition - i4.0 Section 2. Sustainable communities 5.6.1 Green technologies Section 3. Prevention of soil and water contamination 5.6.4 Knowledge and sustainable management of agricultural and forestry systems Section 6. Socio-economic analyses and evaluations of agricultural production systems
Project title	Sociological-legal instruments for the analysis of environmental crime phenomena (ecomafie)
Project description	The following project will focus on innovative sociological-legal topics aiming at promoting environmental preservation as a value in company ethics. Such cross-disciplinary pathway is built upon a sociological-legal methodology whose goal is to find tools for the analysis of waste management, unlawful building, and contrast to corruption on environmental matters. The profile is means to define theoretical models and implement to quantitative and qualitative metrics to be provided to AI technologies to counter environmental crime phenomena (ecomafie). The project aims to implement applied research on 'green' development and on the sustainability of decisions taking by the industry by promoting innovative development policies, consistently with recent EU legislation and UN 2030 Agenda. One visiting semester abroad and a six-month internship in a private firm are required. In these periods, the candidate will work on the implementation of the technologies needed to assess qualitative standards in waste management and document and data traceability.
Mandatory traineeship	6 months
Company type	Company in the sector of digitalization of decision-making and organizational processes, in governmental, civic and corporate organizations
Stay abroad	6 months

n. 3 - GREEN

Thematic area SNSI 2014-20	Health, nutrition, quality of life <i>Development trajectories:</i> 1. Systems and technologies for packaging, preservation and traceability and safety of food production
PNR 2021-2027	5.2.5 Social transformations and the inclusion society Section 6. Urban welfare, public city and rights Section 7. Innovation, democracy, ethics and law Section 12. Strategies and tools for urban regeneration and territorial government 5.4.3 Artificial intelligence Section 1. Artificial intelligence for artificial intelligence (AI for AI) Section 5. Artificial intelligence for the environment and critical infrastructures 5.4.6 Innovation for the manufacturing industry Section 3. Smart industry 5.6.2 Food science and technology Section 1 Food safety and hygiene Section 2. Food System Authenticity and Integrity
Project title	Legimatics and AI tools for the monitoring of EU legislation in agrifood and SDGs
Project description	Agrifood legislation shall handle important challenges including the balancing between sustainability, market, quality, security and equal distribution of food resources. The EU Green Deal fosters these goals together with Codex Alimentarius (FAO). Food business operators need transparency, legal certainty, co-drafting tools, legislative simplification, and normative integration across all legislative levels. Legimatics technologies, integrated by AI and legal reasoning, can contribute to the legislative comparison, according to legal studies methodologies, and measure UN “Sustainable development goals” (SDG). The project aims to use these technologies, including formal ontologies (e.g., AGRIVOC, EUROVOC, SDGIO), Big Data and AI, to detect inconsistent rules and monitor their efficacy with the SDG system to help agrifood operators in legal compliance (e.g. packaging, preservation, traceability) in the course of food-related business activities. Moreover, the project aims to identify actions linked to SDGs to monitor their efficacy and ease decision-making and policy-making.
Mandatory traineeship	6 months
Company type	Company in the sector of digitalization of decision-making and organizational processes, in governmental, civic and corporate organizations
Stay abroad	6 months

n. 4 - GREEN

Thematic area SNSI 2014-20	Digital Agenda, Smart Communities, Smart Mobility Systems <i>Development trajectories:</i> 1. Technologies for smart building, energy efficiency, and environmental sustainability
PNR 2021-2027	5.2.5 Social transformations and the inclusion society Section 6: Urban Welfare, Public City and Rights Section 7. Innovation, democracy, ethics and law Section 12: Strategies and tools for urban regeneration and territorial governance 5.3.2 Natural systems security Section 4. Governance and management of natural risks and anthropogenic impacts 5.4.1 Digital Transition - i4.0 Section 1. Human-centred services Section 2. Sustainable communities
Project title	Analyses of AI-supported collective decision oriented towards sustainable goals (theoretical and legal perspectives)
Project description	Multi-agent decision-making is a complex process and much attention in legal theory has been devoted to its analysis and evaluation in the last 50 years. Finalising decisions oriented towards sustainable environmental goals require a radical shift in the consolidated analysis paradigms, as it has to include predictive models based on AI that

	determines an increase in the level of automation of the decisions and in the interaction between humans and machine in the course of the deliberation. The project aims to understand what the effects of such change are, both on a descriptive-analytic and on an ethical-normative level, in order to build new decision-making models aiming at environmental sustainability by collective agents such as institutions and undertakings. Such theoretical research should be able to contribute, together with ICT experts, to the development of new tools for the digitalisation of decision-making and organisational processes followed by institutions and undertakings in the context of the green economy. Such models should ease energy efficiency and contribute to define, in a participative and deliberative way, the agendas and the regulatory tools used in the context of zoning planning.
Mandatory traineeship	6 months
Company type	Company in the sector of digitalization of decision-making and organizational processes, in governmental, civic and corporate organizations
Stay abroad	6 months