Admission period II: Document "Available positions and Examination procedures"

Call for Applications for the admission to the PhD programmes of the University of Udine in the Academic Year 2025/2026, 41st cycle (Rector's Decree n. 299 of May 5, 2025 art. 3 p. 5)

Second Session	Opening date	Closing date	PhD study programme start
	September 30, 2025 (14.00 h p.m. Italian time)	October 30, 2025 (14.00 p.m. Italian time)	January 1, 2026

DISCLAIMER:
The official and legally binding "Available positions and Examination procedures" is in Italian only.
This document cannot be used for legal purposes and it is only meant to provide information in English on the procedure (University Chancellor's Decree n. 299 of May 5, 2025).
Please refer to the official document "Available positions and Examination procedures" published on the official register (https://www.uniud.it/it/albo-ufficiale) and on the PhD website of the University of Udine.
Any changes and integrations will be made available on the mentioned above web pages. Therefore, no personal written communication shall be provided to applicants about examinations dates, competition results and deadlines regarding the enrollment.

ART. 1 – POSITIONS AVAILABLE AND EXAMS

1. This document "Available positions and exams" shows for each doctoral programme (Tables 1-6): the number of available positions, with details (with and without scholarships and possible reserves for specific candidates' categories); the type and amount of the scholarships, with the source of funding and any reference programs and regulations; the period spent abroad (mandatory or optional); the timetable for the exams, the date of publication of the list of admitted applicants to the exams and the final ranking(s).

2. The Tables of the PhD programmes are so listed:
- Computer Science and Artificial Intelligence (Table 1)
- Molecular Medicine (Table 2)
- Food Science (Table 3)
- Environmental and Energy Engineering Science (Table 4)
- Mathematical and Physical Sciences (Table 5)
- Clinical and Translational Medical Sciences (Table 6)

ART. 2 – SPECIFIC PROVISIONS FOR ESF SCHOLARSHIP

1. The PhD positions funded by the European Social Fund are managed by the University of Udine in accordance with the provisions of the Notice referred to in the Specific Programme 20/24 "Support for the training of the regional university system of Friuli Venezia Giulia" of the ESF+ Regional Programme 2021/2027 of the Autonomous Region of Friuli Venezia Giulia, within the framework of the accredited PhD programmes of the University of Udine (Decree no. 9526/GRFVG of 28 February 2025 and subsequent amendments and additions) - CUP G23C25000620008. In derogation from the provisions of art. 24, paragraph 5 of the Regulations for PhD Programmes, for positions funded by the ESF, the renunciation of the scholarship shall automatically imply the withdrawal from the PhD programme.

2. In addition to the rights and duties provided by the relevant regulations for the PhD programmes (Rector's Decree n. 299 of May 5, 2025 art. 18), in accordance with the provisions mentioned in art. 1, the successful candidate for a position with scholarship from the European Social Fund Specific Program 20/24) by accepting the grant:
- undertakes to submit the reports of the activity carried out according to the modalities and terms that will be communicated by the University of Udine and in compliance with the regulatory provisions mentioned in art. 1;
- undertakes to ensure compliance with the communication and information obligations provided for in article 18 "Information and Publicity" of the Decree cited in art. 1;
- is aware that:
  - the modification of activities, project objectives and expected results, where not previously authorized, will result in the revocation of the scholarship;
  - any negative judgment of the Teaching Board and the consequent non-admission to the next year of the doctoral programme, failure to obtain the degree and withdrawal from the course entails the revocation of the scholarship;
  - must comply with the principle of "do no significant harm" to environmental objectives (DNSH);
  - the doctoral programme may be legitimately suspended for maternity leave, parental leave, serious health reasons and other causes beyond the doctoral student's control and causes of such gravity as to prevent the performance of the doctoral activity subject to the judgment of the Teaching Board and to the competent bodies of the Friuli Venezia Giulia Region;
  - the University may also recourse for the repayment of the amounts received in the following cases of scholarship renunciation:
    - at least 40% of the planned duration of the training program has not been completed if the interruption is due to the doctoral student having a new job or a new academic position;
    - regardless of the period completed, if the interruption is not attributable to the causes of suspension indicated in the preceding paragraph.

3. PhD research programs funded by the European Social Fund will ensure compliance with the horizontal priorities and the principle of DNSH (Do No Significant Harm) set out in paragraph 12 of the Call referred to in paragraph 1.

ART. 2 – FINAL PROVISIONS

1. For all matters not governed by this document, the provisions of the Rector's Decree n. 299 of May 5, 2025 "Call of application for admission to PhD programmes at the University of Udine a.y. 2025/2026, 41st cycle" shall apply.

1. POSITIONS and EXAMS – PhD Programme in COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 14, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 24, 2025**
	Time	**10:45 AM (Italian time)**
	Place	**University of Udine – Room A025 (Rizzi location) – via delle Scienze 206, 33100 Udine.** **https://www.dmif.uniud.it/il-dipartimento/sedi/**
	The oral examination consists of completing an initial written test and attending a subsequent interview. The initial written test will be held at the same time for all candidates (start time 10:45 AM Italian time). Thereafter, the order of convocation for each candidate's interview will be scheduled. Interviews can also be organized over several days. The oral examination (written test and interview) may be taken remotely upon motivated request and in accordance with the provisions of the call (art. 9 p.4 of the Call). Detailed instructions on the organization of the oral examination will be communicated to the admitted candidates. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 3

Detailed description	*N.*	*Type*	*Funding*	*Annual gross amount*	*Period abroad*	*Research program*
Positions **WITH SCHOLARSHIP: 3**	**1**	D.R. 299/2025 art. 11 p. 2 lett. a)	External Institution: Cleverynext S.R.L.*	€ 19,367.00	max 6 months optional	Area A
	1	D.R. 299/2025 art. 11 p. 2 lett. a)	Associated Institution: Fondazione Bruno Kessler	€ 19,367.00	max 6 months optional	Area B
	1	D.R. 299/2025 art. 11 p. 2 lett. a)	External Institution: GlassFORM.ai S.p.A.*	€ 19,367.00	max 6 months optional	Area C

*Scholarships funded by "External Institutions" and associated locations can be assigned subject to the successful completion of the agreement that governs their funding or the decree's issuance granting funding or approving the operation (Rector's Decree n. 299/2025 art. 14 p. 7).

RESEARCH PROGRAMMES

Area A – Funder: Finanziatore: Cleverynext S.R.L.

Advanced Techniques for Verification and Monitoring of Security Properties in OT Networks

Ethernet Consist Networks (ECN) are emerging as a promising technology for on-board train communications, offering significant benefits over traditional systems, such as reduced costs, greater flexibility, and standardization. Despite these advantages, the adoption of ECN in critical railway contexts requires a rigorous guarantee of security. Operational Technology (OT) networks, especially those used in train control systems, are particularly vulnerable due to their specialized nature and the need to operate with tight timing constraints.
This project aims to address these challenges by ensuring the integrity and security of ECN communications through a comprehensive verification and monitoring approach.
Specifically, the goal is to design and develop an anomaly detection system capable of operating in real-time with minimal latency ("wire-speed") to immediately identify cyber-attacks. This system is designed to function under the stringent time constraints typical of OT networks. The proposed approach will be based on machine learning techniques for network traffic classification at layers 2 and 3 of the ISO/OSI stack. The traffic analysis will be distributed among the network devices on board the train, optimizing performance and ensuring continuous monitoring.
In conclusion, this PhD project aims to make a significant contribution to the security of railway networks by proposing innovative and practical solutions that can be integrated to ensure safe and reliable operations in other critical OT contexts as well.

1. POSITIONS and EXAMS – PhD Programme in COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE

Area B – Funder: Fondazione Bruno Kessler
Integrating LMMs and ontological reasoning for the analysis of engineering diagrams
Model-based monitoring and diagnosis for infinite-state systems
Combining GeoAI and multi-modal LLM for spatial-temporal information retrieval from historical data

Area C – Funder: GlassFORM.ai S.p.A.
AI-based Digital Twins and Control Systems for rigid packaging manufacturing (focus on hollow glass). Within the context of industrial packaging manufacturing, with main focus on hollow glass productions, this PhD research is aimed at exploiting physics-aware Artificial Intelligence solutions, including Physics Informed Neural Networks (PINNs) as well as Computer Vision and Time Series Forecasting, both with the aim of building Digital Twins and Simulators for the process as well as in conjunction with meta-heuristic optimizations (multi-objective and bio-inspired algorithms), to minimize the environmental impact of rigid packaging production processes while maximizing the quality of the final products. The candidate will explore interdisciplinary research involving the development of Artificial Intelligence and Data-Driven solutions, optimization methods, continuum mechanics and (upon availability) laboratory experiments and data collection. This initiative is funded by GlassFORM.ai, an international joint-venture between Bottero (Italy) and Kestrel Vision (France), worldwide leaders in machinery, inspection systems and services for glass and rigid packaging industries. GlassFORM.ai provides process automation solutions for the manufacturing industry using Artificial Intelligence and Machine Learning; its target market is the packaging industry, with main focus on hollow the glass production segment (bottles, containers, etc.) and/or PET production lines. Hollow glass production is achieved by melting glass' constitutive matter at about 1700°C and then carrying out a wealth of processing steps, some of which are described by continuum multi-phase fluid dynamics, others by discrete physics. The entire process entails heat transfer, either from or towards glass, in order to trigger variations of state and behavior, and is characterized by a strong nonlinearity due to both glass' intrinsic properties as well as its interaction with the machinery.

COESIONE ITALIA 21-27
Cofinanziato dall'Unione europea
REGIONE AUTONOMA FRIULI VENEZIA GIULIA

2. POSITIONS and EXAMS – PhD Programme in MOLECULAR MEDICINE

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 14, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 24, 2025**
	Time	**09:30 AM (Italian time)**
	Place	**Department of Medicine (DMED), Seminar Room – Piazzale Kolbe 4, 33100 Udine ITALY**
	Based on the number of applicants, the oral examination may take place in more than one day. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 1

Detailed description	*N.*	*Type*	*Funding*	*Annual gross amount*	*Period abroad*	*Research program*
Positions WITH SCHOLARSHIP: 1	**1**	D.R. 299/2025 art. 11 p. 2 lett. a)	External funding: Specific Programme 20/24 ESF+ 2021/2027 of the Autonomous Region Friuli Venezia Giulia (Decreto n. 9526/GRFVG of 28 February 2025 and subsequently amended and supplemented) - CUP G23C25000620008	€ 17,805.00	max 6 months optional	Area A

RESEARCH PROGRAMMES

Area A – Founder: Specific Programme 20/24 ESF+ 2021/2027 Region FVG

Research Topic	**Specialization Area S4 and Trajectory/ies of reference**	**Organisation, methods, results and innovativeness of the project**	**Integration with networks and partnerships, spin-offs and contribution to strategic supply chains and the development of the regional production system**
Role of the Extracellular Matrix and Mechanical Forces in Transthyretin Amyloidosis Prof. Alessandra Corazza	**Specialization Area S4:** 4.Health, Quality of Life, Agrifood and Bioeconomy. **Trajectory/ies of reference:** 4.Solutions and systems for innovative therapies: integrated development of drugs and biopharmaceuticals (biotech) for personalized and sustainable medicine.	In patients suffering from systemic amyloidosis, the progressive accumulation of amyloid fibrils together with components of the extracellular matrix leads to organ dysfunction, impaired quality of life and is often fatal. Twenty different proteins have currently been identified as components of systemic amyloid fibrils, most of which are hereditary. The most common forms of systemic amyloidosis result from the aggregation and deposition of wild-type or variant transthyretin or monoclonal immunoglobulin light chains (AL). ATTR amyloidosis is now recognised as one of the most common causes of heart failure. The project aims to investigate the role of the extracellular matrix and mechanical forces in the formation of transthyretin (TTR) amyloid fibres at the level of the heart. Structural and dynamic changes that can lead to partial unfolding and fibre formation will be analysed using a highly innovative, high-resolution nuclear magnetic resonance (NMR) instrument equipped with a shear force generation system. In addition to the role of mechanical forces, the role of the extracellular matrix will also be investigated using decellularized heart tissue from a mouse model of ATTR.	The Biochemistry Laboratory of the University of Pavia and the National Amyloidosis Centre (NAC, UCL, London) will provide the triply labeled proteins and collaborate on amyloidogenicity assays. The NAC will supply decellularized tissues from mouse models of TTR Amyloidosis. The PhD student will also be trained in the aforementioned laboratories, addressing the development needs of integration with national and international research organizations (S4). The results will help to understand the still unclear mechanism of fibrillogenesis, a crucial factor for therapy.

3. POSITIONS and EXAMS – PhD Programme in FOOD SCIENCE

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 17, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 26, 2025**
	Time	**9:00 AM (Italian time)**
	Place	**Department of Agricultural, Food, Environmental and Animal Sciences (DI4A) – via Sondrio 2/A, 33100 Udine**
	Based on the number of applicants, the oral examination may take place in more than one day. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 1						
Detailed description	***N.***	***Type***	***Funding***	***Annual gross amount***	***Period abroad***	***Research program***
Positions WITH SCHOLARSHIP: 1	**1**	D.R. 299/2025 art. 11 p. 2 lett. a)	External Institution: Tampieri S.p.A.*	€ 17,805.00	max 6 months optional	Area A

RESEARCH PROGRAMMES

Area A – Funder: Tampieri S.p.A
Valorisation of oil industry by-products: characterisation, functionality and possible applications of high oleic corn and sunflower lecithins The research project covered by this PhD in Food Science aims to explore possible strategies for the valorisation of high oleic corn and sunflower lecithins, by-products obtained during the refining of the respective oils. In particular, the project aims to identify possible applications for these innovative lecithins as an alternative to the more traditional soy lecithins. To this end, the compositional, physical and chemico-physical characteristics, as well as the technological functionalities of lecithins extracted from crude corn and high oleic sunflower seed oils, will be evaluated.

4. POSITIONS and EXAMS – PhD Programme in ENVIRONMENTAL AND ENERGY ENGINEERING SCIENCE

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 17, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 27, 2025**
	Time	**4:30 PM (Italian time)**
	Place	**Polytechnic Department of Engineering and Architecture (DPIA), Sala Riunioni Bianca (Meeting room "Sala Bianca") DPIA – via delle scienze 206, 33100 Udine**
	Based on the number of applicants, the oral examination may take place in more than one day. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 1						
Detailed description	***N.***	***Type***	***Funding***	***Annual gross amount***	***Period abroad***	***Research program***
Positions WITHOUT SCHOLARSHIP: 1	**1**	D.R. 299/2025 art. 11 p. 3 lett. b).	University of Udine	-	max 6 months optional	Area A

RESEARCH PROGRAMMES

Area A – Funder: University of Udine
In line with PhD research topics (University Rector's Decree n. 299/2025 - Table 6)

8. POSITIONS and EXAMS– PhD Programme MATHEMATICAL AND PHYSICAL SCIENCES

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 18, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 28, 2025**
	Time	**9:00 AM (Italian time)**
	How to conduct the examination	**Department of Mathematical, Computer and Physical Sciences (DMIF), DMIF Meeting Room, 2nd floor – Via delle Scienze 206, 33100 Udine**
	Based on the number of applicants, the oral examination may take place in more than one day. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 2

Detailed description	*N.*	*Type*	*Funding*	*Annual gross amount*	*Period abroad*	*Research program*
Positions WITH SCHOLARSHIP: 1	**1**	DR 299/2025 art. 11 p. 2 lett. a)	External funding: Regional Programme (PR) ESF+ 2021/2027 of the Autonomous Region Friuli Venezia Giulia (Decreto n. 9526/GRFVG of 28 February 2025 and subsequently amended and supplemented) - CUP G23C25000620008*	€ 17,805.00	max 6 months optional	Area A
Positions WITHOUT SCHOLARSHIP: 1	**1**	D.R. 299/2025 art. 11 p. 3 lett. b)	University of Udine	-	max 6 months optional	Area B

*Scholarships funded by "External Institutions" and associated locations can be assigned subject to the successful completion of the agreement that governs their funding or the decree's issuance granting funding or approving the operation (Rector's Decree n. 299/2025 art.14 p.7).

RESEARCH PROGRAMMES

Section A – Funder: Regional Programme 20/24 ESF+ 2021/2027

Research Topic	**Specialization Area S4 and Trajectory/ies of reference**	**Organisation, methods, results and innovativeness of the project**	**Integration with networks and partnerships, spin-offs and contribution to strategic supply chains and the development of the regional production system**
Upgrade of the Solar Concentrator Installed at the Azienda Agraria of the University of Udine Prof. Marina Cobal	**Specialisation Area S4:** Energy Transition, Circular Economy, and Environmental Sustainability. **Trajectories of reference:** Application of the Circular Economy at the System Level, Energy-Efficient Buildings.	The Linear Mirror, the solar concentrator developed at UniUD and installed at the local Azienda Agraria, is a valuable research tool. This project aims to enhance its performance by increasing its power and upgrading the control system, making it a cutting-edge technology capable of providing sustainable energy solutions across various industrial sectors. The project relies on a support team with the expertise needed to drive this research forward in the PhD timeframe.	The proponent is the Director of the School of Introduction to Renewable Energies in Udine, with industrial contacts and affiliations with INFN (a national network of 14 research institutes) and CERN (an international laboratory in Geneva). He is also Vice President of the International Trieste Foundation, whose activities focus on sustainability. The project will enhance the solar concentrator, making it more powerful and autonomous, useful for producing hot air and water for industry. PhD students will collaborate with UniUD's Azienda Agraria and local industrial sectors.
Analytical methods for the modelling of tensegrities and soft robots Prof. Paolo Gidoni	**Specialisation Area S4:** Intelligent Factory and Sustainable Development of Made in Italy supply chains. **Trajectory of reference:** Solutions and technologies for product innovation.	The aim of the project is to develop advanced analytical methods and prove theoretical results supporting the modelling, design and control of soft robotics and/or tensegrity-based devices. Tools from calculus of variations, qualitative theory of	Soft materials (such as biopolymers, natural fibers and other smart materials) and elastic metamaterials based on tensegrity are flourishing as a paradigm in the design of robotic devices, due to their general properties of compliance and dexterity, and possibly of biocompatibility and lightness. However,

8. POSITIONS and EXAMS– PhD Programme MATHEMATICAL AND PHYSICAL SCIENCES

		dynamical systems and geometrical mechanics will be employed.	the modelling of such materials increases the mathematical complexity required: such issue will address in the project.
Mathematics for the Evolutionary Therapy Prof. Rossana Vermiglio	**Specialisation Area S4:** Health, Quality of Life, Agribusiness and Bioeconomy. **Trajectory of reference:** Solutions and systems for innovative therapies: integrated development of drugs and biopharmaceuticals (biotech) for personalized and sustainable medicine.	Evolutionary therapy is a therapeutic approach based on the concept of dynamically adapting treatment to the changing characteristics of the tumor or microbial infection. Instead of following a fixed treatment schedule, this strategy involves altering the treatment in response to the disease's evolution, which develops resistance mechanisms over time. The central idea is to anticipate and address the tumor's evolution by proactively modifying therapies to prevent or counteract drug resistance. This technique requires the use of mathematical and numerical models to predict and guide changes in treatment, based on clinical data and the evolving behavior of the tumor. The goal is to control tumor growth in the long term, improving the chances of treatment success compared to traditional therapies. The aim of the project is to analyze the use of mathematical and numerical models to support therapeutic decisions for certain tumors or other microbial diseases. It will be considered also the extension of evolutionary therapy for plant diseases.	The proposer participates in working groups and collaboration networks both nationally (INdAM/GNCS, UMI/MSE, MUR-PRIN) and internationally (IFAC), which focus on research topics with applications in population dynamics and epidemiology. The methodologies under investigation will lead to the development of software.

Area B – Funder: University of Udine
Programmes in all research topics (Rector's Decree No. 299/2025 - Table 8)

6. POSITIONS and EXAMS – PhD Programme in CLINICAL AND TRANSLATIONAL MEDICAL SCIENCES

GENERAL COMPETITION

Date for the publication of admitted applicants to the oral examination	Within November 14, 2025
Date for the publication of the final ranking list	Within December 5, 2025

Examination schedule		
Oral examination	**Date**	**November 24, 2025**
	Time	**10:00 AM (Italian time)**
	Place	**Department of Medicine (DMED), Room B – Piazzale Kolbe 4, 33100 Udine ITALY**
	Based on the number of applicants, the oral examination may take place in more than one day. To attend the examination tests, the candidates must exhibit a valid identity document or other personal identification document (possibly the same document attached to the application), under penalty of exclusion from the selection procedure. Citizens of non-EU states must mandatorily exhibit their passport.	

Available positions: 5						
Detailed description	***N.***	***Type***	***Funding***	***Annual gross amount***	***Period abroad***	***Research program***
Positions WITHOUT SCHOLARSHIP: 2	**2**	D.R. 299/2025 art. 11 p. 3 lett. b)	University of Udine	-	max 6 months optional	In line with PhD research topics (University Rector's Decree n. 299/2025 - Table 9)
Positions WITHOUT SCHOLARSHIP reserved for ASU FC's employers: 3	**3**	D.R. 299/2025 art. 11 p. 3 lett. b)	University of Udine	-	max 6 months optional	In line with PhD research topics (University Rector's Decree n. 299/2025 - Table 9)