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UNIVERSITÀ
DEGLI STUDI
FIRENZE



DOCTORAL PROGRAMME IN INDUSTRIAL ENGINEERING

Director Prof. Lapo Governi

XLII cycle – academic year 2026/2027

TECHNOLOGICAL AREA	
ADMINISTRATIVE OFFICE	Department of Industrial Engineering Florence (DIEF)
WEB	www.phdingind.unifi.it
CURRICULA	1. Energy and Innovative Industrial and Environmental Technologies 2. Design and Development of Products, Processes and Materials 3. Industrial Engineering and Reliability
POSITIONS AVAILABLE: 20 Positions with scholarship: 18 Positions without Scholarship: 2* <i>* standard ranking only</i>	
Gross Annual amount of the scholarship € 21,000.00 (gross value) The increase of the scholarship is funded by Department of Industrial Engineering	
RANKING LIST FOR STANDARD POSITIONS SCHOLARSHIPS AVAILABLE: 1	University of Florence
RANKING LISTS FOR POSITIONS WITH SPECIFIC RESEARCH TOPICS SCHOLARSHIPS AVAILABLE: 17	5 - University of Florence 11 - Department of Industrial Engineering Thematics: 1. Development of CFD methods for the analysis of thermo-fluid dynamics processes in turbomachinery. 2. Development of experimental methods for studying heat transfer issues in turbomachinery. 3. Development of innovative strategies for multi-physics modelling and optimization of mechanical components. 4. Bridging Perception and Interaction through Orchestrated Agentic Architectures for Adaptive Social Robotics. 5. Development of Guidance, Navigation, and Control Systems for Autonomous Underwater Vehicles. 6. Analysis on the influence of temporal input data on the simulation of energy systems fed by renewables.

7. Development of numerical methods for assessing sealing system performance in reciprocating compressors.
8. Investigation of innovative combustion systems and alternative fuels for CO₂ reduction using advanced diagnostics.
9. Investigation on active control of vibrations in machining processes.
10. Methodologies for the development of innovative pediatric simulators for training and preoperative planning.
Cofunded by Cassa di Risparmio di Firenze – “Progetto T3Ddy -2026.0450”
CONTRIBUTO_FCR_T3DDY_2026_0450 - CUP B13C26001220007
11. Development of electromechanical solutions for next-generation underwater robots.
Cofunded by MUR Call FIS2 project “Pioneering Endless Autonomy for Next-Generation Marine Robotics (PRSTNT) project code FIS-2023-03704- CUP B53C24009590001.
12. Development of solutions to improve the endurance of next-generation underwater robots.
Cofunded by MUR Call FIS2 project “Pioneering Endless Autonomy for Next-Generation Marine Robotics (PRSTNT) project code FIS-2023-03704- CUP B53C24009590001.
13. Design for Industrial Circularity: models and tools for optimising the life cycle of products containing critical raw materials.
Cofunded by HORIZON EUROPE project (Cluster 5 - Climate, Energy and Mobility) “Circular design and manufacturing techniques for next generation highly-efficient integrated axial flux motor drives for electric vehicles” CLIMAFLUX – CUP B13C23004470006.
14. Development and implementation of tailored Rapid LCSA models integrated into circular design and the development of industrial products and renewable energy systems.
Cofunded by HORIZON EUROPE project (Cluster 4 Digital, Industry and Space) “Digital platform for data-driven and physics-based product development enabling a circular economy” - Digi4Circular – CUP B13C24003830006.
15. Performance and sustainability analysis of innovative value chains: thermal energy storage and valorisation of residual streams.
Cofunded by HORIZON EUROPE project (Circular Bio-based Europe Joint Undertaking) “Smart modular mobile biorefining of manure to zero-waste maximising resource and nutrient recovery for feed and fertiliser bioingredient in rural areas” – MANUREFINERY – CUP B13C24002980006.
16. Development of experimental methods for the characterisation of adsorbent materials for thermal energy storage.
Cofunded by HORIZON EUROPE project (Cluster 5 - Climate, Energy and Mobility) “Thermochemical storage Utilization eNabling Data centre seasonal Energy Recovery”- THUNDER – CUP B13C23004060002

1 – Cofunded by Department of Industrial Engineering DIEF and Nuova Pignone S.r.l.

Thematic: Artificial Intelligence Assisted Simulations for Robust Design of Turbomachinery

STUDY/RESEARCH PERIODS ABROAD	at least 3 months																				
DOCUMENTS REQUIRED FOR THE ADMISSION	• Copy of the Identification Document • Self-certification for qualifications obtained in Italy (laurea triennale, specialistica o magistrale o ciclo unico) with list of exams taken, credits and related grade, title of the thesis and graduation mark (using this template or similar forms containing the required information) • Qualifications obtained abroad (Bachelor’s and Master Degrees or combined cycle Degree) with a list of all exams taken, credits and related grade, rating scale, title of the thesis and graduation mark <i>The same documentation except for the final mark must be submitted by those who will graduate within the 31/10/2025</i>																				
DOCUMENTS REQUIRED FOR THE EVALUATION	MANDATORY • Curriculum Vitae • Research project OPTIONAL • Abstract of the MSc degree Thesis • Scientific publications • Any other additional qualification document																				
RESEARCH PROJECT	The research project must be written in Italian or English in NO MORE than 12,000 characters including spacing, abstract, introduction and references. The candidate can apply for several rankings by submitting a specific research project for each ranking (<u>clearly state the reference to the chosen thematic</u>). Candidates who apply for standard ranking need to submit a project related to one of the thematics listed at https://www.phdingind.unifi.it/p60.html																				
INTERVIEW MODE	Remotely (Videocall)																				
FURTHER INFORMATION	The interview can be conducted in English language																				
EVALUATION MARKS	<table><tr><th>parameter</th><th>minimum score</th><th>maximum score</th></tr><tr><td>Curriculum vitae; publications, other qualification documents</td><td>10/120</td><td>15/120</td></tr><tr><td>Evaluation of the research project</td><td>50/120</td><td>65/120</td></tr><tr><td colspan="3">Applicants who obtain a mark of at least 60/120 according to the minimum score for each parameter will be admitted to the interview.</td></tr><tr><td>Interview: discussion of the research project and publications (if any)</td><td>20/120</td><td>40/120</td></tr><tr><td colspan="3">Eligibility is achieved with a minimum score of 80/120</td></tr></table>			parameter	minimum score	maximum score	Curriculum vitae; publications, other qualification documents	10/120	15/120	Evaluation of the research project	50/120	65/120	Applicants who obtain a mark of at least 60/120 according to the minimum score for each parameter will be admitted to the interview.			Interview: discussion of the research project and publications (if any)	20/120	40/120	Eligibility is achieved with a minimum score of 80/120		
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EXAMINATION SCHEDULE		
	DATE	TIME
INTERVIEW	July 20 th 2026	09:00 a.m.

The list of the candidates admitted to the interview and the final ranking will be published at the page **PhD courses**

ENROLLMENT ROUNDS

Enrollment must be completed within the specified mandatory deadlines, under penalty of exclusion
(as per Art. 12 of the Call for Applications - Annex 1)

	Opening Date	Deadline for Enrollment
Enrollment (successful candidates)	Ranking's publication date (by July 31, 2026)	by 11.59 pm (CEST) on August 25th 2026 *
1st round (eligible candidates)	from 31st August 2026	by 11.59 pm (CEST) on September 7th 2026
2nd round (eligible candidates)	from 10th September 2026	by 11.59 pm (CEST) on September 17th 2026

** Please note that the University will be closed from August 8th to August 23th, 2026.*

Subsequent reassignment of vacant positions:

The reassignment of any residual positions after the first two rounds will be activated on **every Tuesday until October 27th**, with a mandatory enrollment deadline set for the following Friday (11:59 PM CEST). It is the sole responsibility of the candidate to check their personal reserved area

No personal communications will be sent to candidates.

Technical instructions for enrollment can be found [here](#)