DOCTORAL PROGRAMME

IN

INDUSTRIAL ENGINEERING

Coordinator prof. Giampaolo Manfrida

TECHNOLOGICAL AREA	
ADMINISTRATIVE OFFICE	Department of Industrial Engineering Florence (DIEF)
CURRICULA	1. Energy and Innovative Industrial and Environmental Technologies 2. Design and development of Industrial Products and Processes 3. Industrial Engineering and Reliability 4. Science and Engineering of Materials
	POSITIONS AVAILABLE: 15 Positions with scholarship: 13 Positions without Scholarship: 2
SCHOLARSHIPS: 13	**6 –** University of Florence **5 –** Department of Industrial Engineering Florence (DIEF) **1 –** co-funded by Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (INSTM) and Department of Industrial Engineering (DIEF) Thematic: *"Nano-structured magnetic materials: development and applications"* **1 –** co-funded by Consiglio Nazionale delle Ricerche (CNR) and PPQSEnse S.r.l. Thematic: *"Optically detected radiocarbon (RARO)"*
STUDY/RESEARCH PERIODS ABROAD	**YES** – only positions with scholarship
MANDATORY PERIOD REQUIRED	3 months
DOCUMENTS REQUIRED FOR THE ADMISSION (under penalty of exclusion)	• Copy of the Identification Document • <u>Replacement Declaration Form</u> self-declaration for: - Italian Degree required for the access - transcript of records with marks *(for those candidates whose degrees will be awarded within the 31st October 2019)* - acknowledgment of compliance for any other qualification documents enclosed with the application • Foreign Degree required for the access *(those candidates whose degrees will be awarded within the 31st October 2019 shall enclose the list of the examinations completed with marks)*

DOCUMENTS REQUIRED FOR THE EVALUATION	**MANDATORY** • Title of the MSc degree Thesis subscribed with the <u>Replacement Declaration Form</u> • Curriculum Vitae • Research project **OPTIONAL** • Abstract of the MSc degree Thesis • Scientific publications • Any other additional qualification document
REFERENCE LETTERS	A section is provided in the online application to specify the e-mail addresses of two professors/researchers willing to provide information about candidates training path and activities performed within a scientific field related to the Ph.D. course.
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 project must be related, and should make specific reference, to one of the proposed work subjects listed in the below section **"Thematics"**.
MODALITY OF EVALUATION	• **Evaluation of curriculum vitae, research project, publications and /or other qualification documents** • **Interview** As detailed in the section below **"Evaluation Marks"**
OTHER LANGUAGES FOR THE INTERVIEW	English
SKYPE INTERVIEW	**YES** – Possible for foreign residents only

parameter	minimum score	maximum score
Curriculum vitae; publications, other qualification documents	12/120	18/120
Evaluation of the research project	28/120	42/120
Applicants who obtain at least 40/120 marks in the evaluation of the above parameters will be admitted to the interview.		
Interview: discussion of the project and publications (if any)	40/120	60/120
Eligibility is achieved with a minimum score of 80/120		

EVALUATION MARKS is the label for the table above.

FURTHER INFORMATION	If the minimum score is not reached for either CV or research project (see box above), the candidate will not be admitted to interview.

THEMATICS	- Innovative cycles for conversion and use of geothermal Energy - Development and integration of multidisciplinary numerical and experimental methodologies for the thermo-fluid dynamics development of high temperature components for industrial gas turbines and aero-engines with low environmental impact - Optically detected radiocarbon (RARO) - Nano-Structured materials for technology innovation - Innovative models for the management of spare parts warehouses - Tools for cogeneration and power plant analysis - Development and implementation of navigation strategies for autonomous mobile robots - Development and embodiment of innovative wearable robotic devices - Design of smart reconfigurable robots for inspection and intervention - Design and optimization of turbomachinery components - Optimization of railway vehicle dynamics - Development of wear and fatigue models for the wheel-rail contact - Models and tools for the design and innovation of outpatient services - Study and application of multi-material solutions addressed to the design of the road vehicles architecture - Toolpath optimisation strategies for thin-walled part machining - Development of parametric models for template-based reconstruction of bone districts - Innovative approaches for the efficiency improvement and exhaust emissions control of Internal Combustion Engines and optimization of their integration in hybrid powertrains. - Numerical approaches for the development and the integration of energy conversion systems based on renewable energy - Biomass and waste/Residue pyrolysis for bio-liquids, biofuels, bio-char and bio-products - Design of auto/eterotrophic algae cultivation systems for biofuel and bio-products - Bio-refinery and bioenergy system modelling - Diagnostics and measurement for the characterization of electrical/electronics devices - Soft mobility as a solution for urban sustainable mobility: solution and opportunities - Advanced solar concentrator collectors: integrated system and components development
Further information available at the following web page: https://www.dief.unifi.it/vp-344-dottorato.html	

EXAMINATIONS SCHEDULE			
	DATE	**TIME**	**PLACE**
INTERVIEW	2nd July 2019	09:00 a.m.	Department of Industrial Engineering (DIEF) Via Santa Marta,3 - Florence Meeting Room
The list of candidates admitted to the interview and the final ranking will be published at the following web page: https://www.unifi.it/p11549.html			