

DOCTOR OF PHILOSOPHY (PHD) PROGRAMME IN "Information Technologies for Engineering"

Coordinator: Prof Massimiliano Di Penta (dipenta@unisannio.it)

Interested applicants are encouraged to contact the coordinator for information on the curricula and the disciplinary areas

FACULTY & ADMINISTRATION	Dipartimento di Ingegneria [Department of Engineering]
DURATION	3 years (36 Months)
CURRICULA	a) Information Technology b) Energy and Environment
Scientific/Academic Disciplinary Fields (SSD)	01/A - MATHS 09/E - ELECTRICAL ENGINEERING, ELECTRONICS AND MEASURES 09/F - TELECOMMUNICATIONS AND ELECTROMAGNETIC FIELDS ENGINEERING 09/G - SYSTEMS ENGINEERING AND BIOENGINEERING 09/H - COMPUTER SCIENCE AND ENGINEERING 08/A - INFRASTRUCTURE AND TERRITORIAL ENGINEERING 08/B - STRUCTURAL AND GEOTECHNICAL ENGINEERING 08/F - PLANNING AND URBAN AND TERRITORIAL DESIGN 09/B - MANUFACTURING, PLANT AND MANAGEMENT ENGINEERING 09/C - ENERGY, THERMO-MECHANICAL AND NUCLEAR ENGINEERING 09/D - CHEMICAL AND MATERIALS ENGINEERING

AVAILABLE POSITIONS: 23 (twenty three)

Positions without Scholarship (4)		4 Positions without Scholarship
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Reserved Positions (2)	Positions reserved to applicants that achieved a scholarship in the country of origin	2 positions	To apply to these positions, the applicant must declare to possess the documentation concerning the achieved scholarship.
Position with scholarship funded by ENEA (1)	Topic: <i>Control and protection system for the radiofrequency system of DTT</i> Funding organization: ENEA – Department of Nuclear Fusion and Technologies for Nuclear Security (FSN)	1 position	

Positions with scholarship funded under the PNRR DM 118/2023 (6)

(<https://www.mur.gov.it/it/atti-e-normativa/decreto-ministeriale-n-118-del-02-03-2023>)

Positions with scholarship funded under the PNRR (4) DM 118/2023 <i>"Innovative PhD for Public Administration and Cultural Heritage" - "Didactics and advanced university skills"</i>	Scholarship n. 1 - Topic (PNRR research): <i>Electromagnetic modeling for nuclear fusion</i>	1 position with scholarship	For this type of position it is mandatory to carry out periods of study and research abroad and in companies/governmental organizations https://www.mur.gov.it/it/atti-e-normativa/decreto-ministeriale-n-118-del-02-03-2023
	Scholarship n. 2 – Topic (Digital and Environmental Transition): <i>Methodologies for flexible management of power networks in presence of pervasive systems for renewable generation</i>	1 position with scholarship	
	Scholarship n. 3 – Topic (Public Administration): <i>Hazard mitigation of natural risk for the civil structures</i>	1 position with scholarship	
	Scholarship n. 4 – (Topic Public Administration): <i>Assessment and monitoring of existing infrastructures with innovative technologies</i>	1 position with scholarship	
	Scholarship n. 5 – Topic (Public Administration): <i>Modeling and management of intellectual property and privacy in artificial intelligence-intensive software systems</i>	1 position with scholarship	

Scholarship n. 6 – Topic (Public Administration): <i>Information technology for humans and environment</i>	1 position with scholarship
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Positions with scholarship funded under the PNRR co-financed by companies DM 117/2023

<https://www.mur.gov.it/it/atti-e-normativa/decreto-ministeriale-n-117-del-02032023>

<p>Positions with scholarship funded under the PNRR (10) co-financed by companies DM 117/2023 <i>“Introduction of innovative PhD that respond to the innovation needs of companies and promote the hiring of researchers from companies”</i></p>	<p>Scholarship n. 1 - Topic: <i>Development of Reconfigurable Metasurfaces for Mini and Micro Droni for 6G and beyond</i> Company: CIRA</p>	1 position with scholarship	<p><i>For type of position it is mandatory to carry out periods of study and research abroad and in companies</i> https://www.mur.gov.it/it/atti-e-normativa/decreto-ministeriale-n-117-del-02032023</p>
	<p>Scholarship n. 2 - Topic: <i>Development of green propulsion systems for aeronautical applications</i> Company: CIRA</p>	1 position with scholarship	
	<p>Scholarship n. 3 – Topic: <i>Novel measurement methods and tools for the green energy</i> Company: New Solution Enterprise S.r.l.</p>	1 position with scholarship	
	<p>Scholarship n. 4 – Topic: <i>Knowledge discovery from big data to improve the performances wind farms</i> Company: New Solution Enterprise S.r.l.</p>	1 position with scholarship	
	<p>Scholarship n. 5 – Topic: <i>Methods and technologies for the multi-objective optimization of energy retrofit of building stocks resilient to climate changes</i> Company: SENE A S.r.l.</p>	1 position with scholarship	
	<p>Scholarship n. 6 – Topic: <i>Automation of a welding cell: analysis and design</i> Company: Industria Italiana Autobus (IIA) S.p.A.</p>	1 position with scholarship	
	<p>Scholarship n. 7 – Topic: <i>Virtual and augmented reality to support production processes</i></p>	1 position with scholarship	

Company: Industria Italiana Autobus (IIA) S.p.A.	
Scholarship n. 8 – Topic: <i>Advanced document retrieval tools for corporate knowledge bases</i> Company: Officine Sostenibili Società Benefit S.r.l.	1 position with scholarship
Scholarship n. 9 – Topic: <i>Termoeconomic optimization of renewable energetic communities</i> Company: KOALA S.r.l	1 position with scholarship
Scholarship n. 10 – Topic: <i>High fidelity Hydraulic model development for off road vehicle in co-simulation with 3D components and reduction in real time with artificial intelligence technique</i> Company: CNH Industrial Italia S.p.A.	1 position with scholarship

Programme Entry Requirements

Programme Entry Requirements	<p>Italian second level specialization degree (“laurea specialistica”) or Italian second level (Master equivalent) graduate degree (“laurea magistrale”) in the following classes</p> <p>LM-4 Architettura e ingegneria edile-architettura LM-6 Biologia LM-7 Biotecnologie agrarie LM-8 Biotecnologie industriali LM-9 Biotecnologie mediche, veterinarie e farmaceutiche LM-17 Fisica LM-18 Informatica LM-20 Ingegneria aerospaziale e astronautica LM-21 Ingegneria biomedica LM-22 Ingegneria chimica LM-23 Ingegneria civile LM-24 Ingegneria dei sistemi edilizi LM-25 Ingegneria dell'automazione LM-26 Ingegneria della sicurezza LM-27 Ingegneria delle telecomunicazioni LM-28 Ingegneria elettrica LM-29 Ingegneria elettronica LM-30 Ingegneria energetica e nucleare LM-31 Ingegneria gestionale LM-32 Ingegneria informatica LM-33 Ingegneria meccanica LM-34 Ingegneria navale LM-35 Ingegneria per l'ambiente e il territorio LM-40 Matematica LM-44 Modellistica matematico-fisica per l'ingegneria LM-53 Scienza e ingegneria dei materiali LM-54 Scienze chimiche LM-66 Sicurezza informatica LM-91 Tecniche e metodi per la società dell'informazione 4/S (specialistiche in architettura e ingegneria edile) 20/S (specialistiche in fisica) 23/S (specialistiche in informatica) 25/S (specialistiche in ingegneria aerospaziale e astronautica) 26/S (specialistiche in ingegneria biomedica) 27/S (specialistiche in ingegneria chimica)</p>
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	<p>28/S (specialistiche in ingegneria civile) 29/S (specialistiche in ingegneria dell'automazione) 30/S (specialistiche in ingegneria delle telecomunicazioni) 31/S (specialistiche in ingegneria elettrica) 32/S (specialistiche in ingegneria elettronica) 33/S (specialistiche in ingegneria energetica e nucleare) 34/S (specialistiche in ingegneria gestionale) 35/S (specialistiche in ingegneria informatica) 36/S (specialistiche in ingegneria meccanica) 37/S (specialistiche in ingegneria navale) 38/S (specialistiche in ingegneria per l'ambiente e il territorio) 45/S (specialistiche in matematica) 50/S (specialistiche in modellistica matematico-fisica per l'ingegneria) 61/S (specialistiche in scienza e ingegneria dei materiali) 62/S (specialistiche in scienze chimiche) 100/S (specialistiche in tecniche e metodi per la società dell'informazione)</p> <p>Italian graduate degree obtained under the system/laws prior to Min Decree 509/99 and equivalent to the classes specified above.</p> <p>For students graduated in foreign Universities, the following (or equivalent) degrees are considered: Master degree or equivalent degree in Computer Science, Biomedical Engineering, Electrical Engineering, Computer Engineering, Software Engineering, Mechanical Engineering, Civil Engineering, Chemical Engineering, Energy Engineering, Aerospace Engineering, Mathematics, Physics, Material Science</p>		
Selection-Admissions : Policies & Procedures	Evaluation of Qualifications, Curriculum vitae and Oral Test		
	Evaluation of Qualifications	Up to 40 points	✓ Curriculum vitae with appropriate certification attesting exams taken and related marks/grades (up to 30 points); ✓ Other (up to 10 points): <ul style="list-style-type: none"> o project; o motivation letter; o publications; o other training and/or research activities undertaken.
Interview	Up to 60 points	The interview will last approximately 30 mins. Applicants are invited to prepare a presentation, of up to 15 mins, also including the use of audiovisual media, on a research topic that is consistent with the specific curriculum or disciplinary area chosen. Applicants should prepare one presentation for each curriculum/disciplinary area for which they have applied. Candidates would need to achieve a minimum grade of 30/60 in the interview in order to pass the oral test.	

			<p>Candidates' English language skills and proficiency will also be evaluated on this occasion.</p> <p>The interview may be conducted via "<i>teleconference</i>" for foreign applicants not residing in Italy or for Italian applicants where circumstances so warrant, which should be justified based on appropriate documentation.</p>
Selection-Admission Tests: Schedules	Oral Test Interview	<p>Oral test dates, times and venues will be announced by way of a notice published on the University website at:http://www.unisannio.it/it/studente/laureato/dottorato-di-ricerca</p>	
Selection-Admission Test Topic	<p>Topic theme to be chosen by the candidate from among those covered by the PhD Programme disciplinary areas. For each specific curriculum/disciplinary area chosen, the candidate must identify and illustrate a specific research pathway.</p>		