Attachment A

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: 8 (eight)

Positions without Scholarship (1)	Topic relevant to the curriculum chosen by the candidate	1 Position without Scholarship **Curriculum A** Information Technology **Curriculum B** Energy and Environment	
Reserved Positions for holders of scholarship from foreign countries (2)	Topic relevant to the curriculum chosen by the candidate	**2 positions**	*To apply to these positions, the applicant must declare to possess the documentation concerning the achieved scholarship.* **Curriculum A** Information Technology **Curriculum B** Energy and Environment
Position funded by the Department of Engineering	**Topic:** Multi-agent Large Language Model-enabled development of AI-intensive software systems **Abstract:** The goal of this project is to develop a multi-agent platform based on Large Language Models to support the (semi)automatic development and deployment of AI-intensive systems. A distinctive feature of the infrastructure will be the creation of an advanced MLOps and LLMOps environment, as well as the management and utilization of AIBOM.	**1 position**	**Curriculum A** Information Technology
Position with scholarship funded by the National Research Council (CNR) *(if the institution does not provide financing, the scholarship position will not be activated)*	**Topic:** Control architectures and protection for the HCD system of DTT **Abstract:** The PhD program is part of the development of the Divertor Tokamak Test facility (DTT) research infrastructure, currently being designed and constructed at the ENEA Research Center in Frascati. Specifically, the PhD will focus on the validation, testing, and analysis of the HCD (Heating and Current Drive) system at the ENEA laboratories, under the technical and scientific supervision of CNR – ISTP (Milan), particularly regarding the control system of the facility and its integration with DTT's central control system (CODAS). The project includes the development of a plasma heating system based on gyrotron technology and the necessary components to operate, test, and integrate it. It also involves control and data transmission technologies, as well as human and machine protection systems.	**1 position**	**Curriculum A** Information Technology

	Funding organization: National Research Council (CNR) – Institute for Plasma Science and Technology		
Positions funded by the University	**Any topic related to the curriculum selected by the applicant**	**3 positions**	**Curriculum A** Information Technology **Curriculum B** Energy and Environment

Programme Entry Requirements

Programme Entry Requirements	Italian second level specialization degree ("laurea specialistica") or Italian second level (Master equivalent) graduate degree ("laurea magistrale") in the following classes 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) 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) Italian graduate degree obtained under the system/laws prior to Min Decree 509/99 and equivalent to the classes specified above. 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		
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): o project; o motivation letter; o publications; o other training and/or research activities undertaken. Candidates would need to achieve a minimum grade of 24/40 to be admitted to the interview
	Interview	Up to 60 points	The interview will last approximately 20 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 36/60 in the interview in order to pass the oral test. Candidates' English language skills and proficiency will also be evaluated on this occasion. The interview will be conducted via "*teleconference*".
Selection-Admission Tests: Schedules	Oral Test Interview	Oral test dates and time will be announced by way of a notice published on the University website at: https://www.unisannio.it/en/ricerca/opportunità/dottorato-di-ricerca	
Selection-Admission Test Topic	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.		