



PO FESR Sicilia 2014-2020

UNIONE EUROPEA
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REPUBBLICA ITALIANA

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ANNEX n. 8

Ph.D. Course	SYSTEMS, ENERGY, COMPUTER AND TELECOMMUNICATION ENGINEERING
Cycle	XXXIV
Scientific area	Industrial and Information Engineering
Duration	3 years
Department	Department of Electric, Electronic and Computer Engineering
Department website	http://www.dieei.unict.it/
Ph.D. Course Coordinator	Prof. Paolo Arena
Partner Institution(s)	None
Research themes	<p>The Ph.D. course learning paths concern Electronics, Automation, Complex Systems Engineering and Control, Instrumentation, Sensors and Wireless Networks of Sensors, Internet of Things, Big Data, Mechanics, Materials, Bio-engineering and Bio-Robotics, Microsystems, Generation, Transmission, Use, Management and Control of Energy, Information Systems, Systems of Telecommunications and Magnetic Fields with a focus on themes related to Smart Systems, Cities and Environment.</p> <p>The course provides candidates with a skill profile that associates technical-scientific training with the development of a research project to be carried out at highly qualified institutions, both national and international, or enterprises. The academic board is integrated by foreign academics who support candidates in their training and research work.</p>
Available places	<ol style="list-style-type: none"> 1) Places with scholarship financed by the University of Catania: 6 2) Places with scholarship financed by CNR-IMM e ST Microelectronics. S.r.l. within the project "Industrial Doctorates" sponsored by CNR and Confindustria: 1 <u>Research theme:</u> "Development of data solutions for quality processes related to the industry of semiconductors" 3) Places with scholarship financed by the National Institute for Volcanology and Geophysics: 2 <u>Research theme 1:</u> Volcanic monitoring of the space <u>Research theme 2:</u> Advanced analysis of space-time data for the recognition of volcanic dynamics 4) Places with scholarship financed by the Italian Institute of Social Security reserved to the children and orphans of users registered with the unitary system of social security credits and the children of retirees registered with the management of public employees: 1 <u>Research theme:</u> Innovative Doctorates "Industry 4.0": 5G network and Artificial Intelligence for an evolution toward Industry 4.0 5) Place with scholarship co-financed by the Department of Agriculture, Food and Environment and by the Department of Electric, Electronic and Computer Engineering: 1 <u>Research theme:</u> Smart dairy farming: innovative solutions to improve herd productivity 6) Place with scholarship financed by the Department of Electric, Electronic and Computer Engineering: 1 <u>Research theme:</u> Unsupervised learning methods and models for data in the medical sector 7) Place with scholarship co-financed by the Department of Electric, Electronic and Computer Engineering and by the National Institute of Astrophysics – Observatory of Catania: 1



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	<p><u>Research theme</u>: AI crossing the borders of Astronomy and Particle Physics: Unsupervised and Explainable Deep Learning Models for Discovery in SKA and DUNE precursors Big Data</p> <p>8) Place with scholarship co-financed by the Department of Electric, Electronic and Computer Engineering, by the Department of Civil Engineering and Architecture and by the Department of Biomedical and Biotechnological Sciences: 1</p> <p><u>Research theme</u>: Safe Driving by E-Health Monitoring</p> <p>9) Place with scholarship financed by the Department of Electric, Electronic and Computer Engineering: 1</p> <p><u>Research theme</u>: Information theoretical modelling of biological signalling, communication and networks</p> <p>10) Place with scholarship financed by the Department of Electric, Electronic and Computer Engineering: 1</p> <p><u>Research theme</u>: Reinforcement Learning Models for Autonomous Robot Traversability and Navigation</p> <p>11) Places without scholarship: 1</p> <p>12) Places without scholarship reserved to graduates from foreign universities: 1</p> <p>TOTAL: 18</p>
<p>Selection procedures</p>	<p>1) Evaluation of qualifications 2) Oral examination</p>
<p>Date, place, format and language of the oral examination</p>	<p>Date: September 14 2020 h. 9,00 (9,00 am Italian time) Place: Department of Electric, Electronic and Computer Engineering, viale Andrea Doria, n. 6, Catania Format: - Dissertation on the research project - General knowledge of the themes of the candidate's degree and/or the themes related to the Ph.D. course Language: Italian or English</p>