



UNIONE EUROPEA



Università degli Studi di Cagliari

PhD Course in INDUSTRIAL ENGINEERING	
DISCIPLINARY SCIENTIFIC AREA	09 - INDUSTRIAL AND INFORMATION ENGINEERING
COORDINATOR	PROF. AYMERICH FRANCESCO
HEAD DEPARTMENT	DIPARTIMENTO DI INGEGNERIA MECCANICA, CHIMICA E DEI MATERIALI
DURATION	3 YEARS
EDUCATIONAL OBJECTIVES AND RESEARCH TOPICS	<p>The goal of the PhD Course is to form professionals who will find suitable job placements at academic institutions, research centers, industries, and who will be able to develop new projects with high scientific and technological content. To this aim the student has to pass specific exams and develop an original research project aimed at the advancement of knowledge in the relevant field of engineering.</p> <p>At the end of each academic year the student has to present her/his activities to the PhD board.</p> <p>The main topics (ERC subsector) of the PhD Course in Industrial Engineering are:</p> <ul style="list-style-type: none"> PE7_1 Control engineering PE7_2 Electrical and electronic engineering: semiconductors, components, systems PE7_4 Simulation engineering and modeling PE6_6 Informatics and information systems PE8_2 Chemical engineering, technical chemistry PE8_6 Energy systems (production, distribution, application)) PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation) PE2_3 Nuclear physics LS7_1 Medical engineering and technology
ELIGIBILITY AND OTHER REQUIREMENTS FOR CANDIDATES	<p>Degree from the Italian university system awarded according to D.M. n. 509/1999 (diploma di laurea specialistica) and according to D.M. n. 270/2004 (diploma di laurea magistrale):</p> <ul style="list-style-type: none"> LM-4 Architettura e ingegneria edile-architettura LM-13 Farmacia e farmacia industriale LM-17 Fisica 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



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	<p>LM-40 Matematica LM-44 Modellistica matematico-fisica per l'ingegneria LM-53 Scienza e ingegneria dei materiali LM-54 Scienze chimiche LM-70 Scienze e tecnologie alimentari LM-71 Scienze e tecnologie della chimica industriale LM-75 Scienze e tecnologie per l'ambiente e il territorio 14/S (specialistiche in farmacia e farmacia industriale) 20/S (specialistiche in fisica) 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) 82/S (specialistiche in scienze e tecnologie per l'ambiente e il territorio) and all equivalent degrees from the previous Italian university system.</p> <p>Foreign student Academic qualification issued by a foreign university, comparable in duration and content to the Italian titles requested and providing access to PhD courses in the country of achievement, recognized as equivalent (degree in Engineering (all fields), Physics, Chemistry)</p>
ADMISSION TESTS	<p>ASSESSMENT OF QUALIFICATIONS, CURRICULUM VITAE, WRITTEN TEST AND INTERVIEW.</p> <p>The aim of the written exam, which consists in the preparation of a report, and of the interview is to analyze the capacity of the candidate in the communication, analysis and knowledge of the PhD topics. The interview will include an evaluation of the level of English proficiency of the candidate.</p> <p>The written exam and the interview could be conducted in English.</p> <p>Candidates who, for justified reasons, are unable to attend the interview, may ask for the interview to be conducted at the same date and time by teleconference (skype), with audio/video modalities that allow the verification of the identity of the candidate</p>
ADMISSION TESTS FOR FOREIGN CANDIDATES	EVALUATION OF THE CURRICULUM VITAE, REFERENCE LETTERS AND INTERVIEW.



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<p>APPLYING FOR RESERVED POSITIONS SUPPORTED BY A SCHOLARSHIP</p>	<p>The interview can be conducted in English by teleconference (skype) with audio and video modality that allows the verification of the identity of the candidate. The curriculum vitae and letters of reference should be written in English.</p>
<p>TOPICS OF WRITTEN TEST</p>	<p>The written test for the Italian candidates consists in the preparation of a report on the following topics (ERC subsector): PE7_1 Control engineering PE7_2 Electrical and electronic engineering: semiconductors, components, systems PE7_4 Simulation engineering and modeling PE6_6 Informatics and information systems PE8_2 Chemical engineering, technical chemistry PE8_6 Energy systems (production, distribution, application)) PE8_8 Mechanical and manufacturing engineering (shaping, mounting, joining, separation) PE2_3 Nuclear physics LS7_1 Medical engineering and technology</p>
<p>POSITIONS</p>	<p>9</p>
<p>SCHOLARSHIPS</p>	<p>4 UNIVERSITY OF CAGLIARI (1 RESERVED FOR FOREIGN CANDIDATES); 2 DIPARTIMENTO DI INGEGNERIA MECCANICA, CHIMICA E DEI MATERIALI:</p> <ul style="list-style-type: none"> ▪ 1 RESEARCH PROJECT “Innovative systems for storage of thermal energy from renewable intermittent sources”, TUTOR Prof. Daniele Cocco (FUNDING: ECU – ENI CORPORATE UNIVERSITY S.P.A.), ▪ 1 RESEARCH PROJECT “Optimisation and evaluation of uncertainty in aeronautical components by adjoint methods”, TUTOR Prof. Daniele Cocco (FUNDING: H2020 PROJECT MADELEINE) <p>1 DIPARTIMENTO DI INGEGNERIA ELETTRICA ED ELETTRONICA,</p> <ul style="list-style-type: none"> ▪ 1 RESEARCH PROJECT “Development of an integrated ICT platform for municipal waste management”, TUTOR Prof. Augusto Montisci (FUNDING: ENL-2016-151561012-IET) <p>Scholarships will be awarded to candidates successfully positioned in the ranking list, obtaining the best score and a positive evaluation on the adequacy of their CV in carrying out the specific research topic connected to the scholarship. Additional scholarships (PON-RI) could be available in case of positive evaluations of project proposals on the following topics:</p> <ol style="list-style-type: none"> 1. Thematic area “Aerospace and defense”. Project “Multi-disciplinary design and optimization of high pressure turbine stage” (Disciplinary area 09 - Industrial and information engineering) 2. Thematic area “Smart and sustainable industry, energy and environment”. Project “Innovative components and systems for production and distribution of sustainable and low-CO2 energies, and for production, storage and distribution of electrical energy according to the Smart Grids concept” (Disciplinary area 09 - Industrial and information engineering) 3. Thematic area “Smart and sustainable industry, energy and environment”. Project “Design of novel hybrid propulsion system for marine vessel with mixed conventional and renewable energy supply” (Disciplinary area 09 - Industrial and information engineering) <p>PON – RI scholarships are dedicated to support doctoral programmes</p>



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	where PhD students spend study and research periods both within a company and abroad.
POSITIONS WITHOUT SCHOLARSHIP	2
REFERENCE PERSON	PROF. FRANCESCO AYMERICH - EMAIL: francesco.aymerich@dimcm.unica.it - TEL. 070.675.5706/5727
WEBSITE	http://phdschools.dice.unica.it/dottingind/index.php