UNIVERSITÀ
DEGLI STUDI DI TRIESTE

Area dei Servizi Istituzionali
Unità di staff Dottorati di ricerca

ATTACHMENT 8 LAST REVISED 05/05/2021

PhD IN INDUSTRIAL AND INFORMATION ENGINEERING OVERVIEW

IN BRIEF

Lines of research	**CURRICULUM: Information engineering**	
	1	Automation
	2	Electronic bioengineering and informatics
	3	Electromagnetic fields
	4	Signal and image processing
	5	Informatics
	6	Measures and electronic instruments
	7	Operational research
	8	Telecommunication
	CURRICULUM: Mechanical engineering, naval\l architecture, energy and production	
	1	Design and optimization of fluid machines and power plants
	2	Rational use of energy in civil and industrial fields
	3	Inverse problems and functional and shape optimization in heat transfer
	4	Design, synthesis and mechanical construction
	5	Theoretical and experimental methodologies for the analysis and design of ships and ocean structures
	6	Product development, process modeling and optimization, design, management and logistics of industrial plants
	7	Converters, machines and electric drives
Administrative location	University of Trieste	
Organizing Department	Department of Engineering and Architecture	
Duration	3 years	
Attendance abroad that entitles to a scholarship increase - min. max. of months for each PhD student (over 3 years)	0 - 12	
Official language	Italian	
Language (alternative to Italian) partially used in PhD activities	The following activities will be held in English: seminars and courses with foreign teachers, direct interaction teachers - foreign students. Almost all the scientific bibliographic material is available in English.	
Subject Areas	01	MATHEMATICS AND INFORMATICS
	08b	CIVIL ENGINEERING
	09	INDUSTRIAL AND INFORMATION ENGINEERING
Macro Research Fields *(in alphabetical code order)*	01/A	MATHEMATICS
	08/A	LANDSCAPE AND INFRASTRUCTURAL ENGINEERING
	08/B	STRUCTURAL AND GEOTECHNICAL ENGINEERING

	09/A	MECHANICAL AND AEROSPACE ENGINEERING AND NAVAL ARCHITECTURE
	09/B	MANIFACTURING, INDUSTRIAL AND MANAGEMENT ENGINEERING
	09/C	ENERGY, THERMOMECHANICAL AND NUCLEAR ENGINEERING
	09/E	ELECTRICAL AND ELECTRONIC ENGINEERING AND MEASUREMENTS
	09/F	TELECOMMUNICATIONS ENGINEERING AND ELECTROMAGNETIC FIELDS
	09/G	SYSTEMS ENGINEERING AND BIOENGINEERING
	09/H	COMPUTER ENGINEERING
Scientific Disciplinary Sectors *(in alphabetical code order)*	ICAR/05	TRANSPORTATION
	ICAR/08	STRUCTURAL MECHANICS
	ING-IND/01	NAVAL ARCHITECTURE
	ING-IND/02	SHIP STRUCTURES AND MARINE ENGINEERING
	ING-IND/08	FLUID MACHINERY
	ING-IND/09	ENERGY SYSTEMS AND POWER GENERATION
	ING-IND/10	THERMAL ENGINEERING AND INDUSTRIAL ENERGY SYSTEMS
	ING-IND/13	APPLIED MECHANICS
	ING-IND/14	MECHANICAL DESIGN AND MACHINE CONSTRUCTION
	ING-IND/15	DESIGN METHODS FOR INDUSTRIAL ENGINEERING
	ING-IND/17	INDUSTRIAL MECHANICAL SYSTEMS ENGINEERING
	ING-IND/32	POWER ELECTRONIC CONVERTERS, ELECTRICAL MACHINES AND DRIVES
	ING-IND/33	ELECTRICAL POWER SYSTEMS
	ING-INF/01	ELECTRONIC ENGINEERING
	ING-INF/02	ELECTROMAGNETIC FIELDS
	ING-INF/03	TELECOMMUNICATIONS
	ING-INF/04	SYSTEMS AND CONTROL ENGINEERING
	ING-INF/05	INFORMATION PROCESSING SYSTEMS
	ING-INF/06	ELECTRONIC AND INFORMATICS BIOENGINEERING
	ING-INF/07	ELECTRICAL AND ELECTRONIC MEASUREMENT
	MAT/09	OPERATIONS RESEARCH
Domain European Research Council	PE	PHYSICAL SCIENCES AND ENGINEERING
ERC Panels	PE6	COMPUTER SCIENCE AND INFORMATICS: INFORMATICS AND INFORMATION SYSTEMS, COMPUTER SCIENCE, SCIENTIFIC COMPUTING, INTELLIGENT SYSTEMS
	PE7	SYSTEMS AND COMMUNICATION ENGINEERING: ELECTRICAL, ELECTRONIC, COMMUNICATION, OPTICAL AND SYSTEMS ENGINEERING
	PE8	PRODUCTS AND PROCESSES ENGINEERING: PRODUCT AND PROCESS DESIGN, CHEMICAL, CIVIL, ENVIRONMENTAL, MECHANICAL, VEHICLE ENGINEERING, ENERGY PROCESSES AND RELEVANT COMPUTATIONAL METHODS

	PE1	MATHEMATICS: ALL AREAS OF MATHEMATICS, PURE AND APPLIED, PLUS MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE, MATHEMATICAL PHYSICS AND STATISTICS

WHO'S WHO	
Chair	Prof. Fulvio Babich - Department of Engineering and Architecture - University of Trieste – phone +39 040.558.7146; email babich@units.it **from 01.11.2021:** Prof. Alberto Tessarolo - Dipartimento di Ingegneria e Architettura - Università degli Studi di Trieste - tel. +39 040 558.7132; email atessarolo@units.it
Vice	Prof. Mauro Reini - Department of Engineering and Architecture - University of Trieste – phone +39 040.558.3823; email reini@units.it **from 01.11.2021:** Prof. Fulvio Babich - Department of Engineering and Architecture - University of Trieste – phone +39 040.558.7146; email babich@units.it
PhD Academic Board	List of members
Web site	https://web.units.it/dottorato/ingii/en
Courses and seminars	https://web.units.it/dottorato/ingii/it/corso/node/4690
Email	phd.indinf@units.it
Learning outcomes	The PhD Course prepares researchers with high scientific profile, culturally oriented to engineering applications. They will be able to develop knowledge, new methods of investigation and design & research activities in public or private organizations, also with managerial competences. The course is organized into two curricula: "Information Technology" and "Mechanical, Marine, Energy and Production Engineering". The activities cover design methods, theoretical analysis, soft-computing and advanced experimentation. During the first year the teaching activity focuses on strengthening the knowledge in basic scientific disciplines and organizational aspects of research. It is tailored on both the PhD student's educational background and research interests. Furthermore in the first year, the state of the art in the discipline of interest is analyzed and the main line of inquiry is identified. In the second and third years, individual research subjects are developed, with the possibility for the PhD student to spend a period in internationally-recognized research institutions as a visiting scholar. Common educational features are the multidisciplinary theoretical-experimental approach as a qualifying aspect of research and the interaction with the territory and its productive fabric. The main objective is therefore the professional promotion of PhD students on the international market of advanced research. The PhD Faculty Board regularly monitors PhD students' performance to ensure they are moving in the right direction towards this objective.
Job placement opportunities	The PhD Course prepares researchers for careers in a variety of labor market sectors, from the industry to research and higher education (universities, research institutions ...), from public administration (local authorities, superintendence...), to professional engineering practice. The PhD degree is also particularly valued in foreign scientific and industrial communities, with important advantages for employment and career perspectives in an international scenario.
Main cooperating international Universities and Research Institutions	1 Universidad Católica Santo Toribio de Mogrovejo (USAT), Perù