



Annex A

PH.D. COURSE OF AGRICULTURE, FOOD AND ENVIRONMENTAL SCIENCES

Coordinator Prof. Bruno Mezzetti

Scientific	AGR/01, AGR/03, AGR/05, AGR/07, AGR/09, AGR/10, AGR/11, AGR/12, AGR/14, AGR/15, AGR/16, BIO/03,
Areas:	BIO/10, AGR/02, AGR/17, AGR/13

Method of selection	Examination based on qualifications: maximum score 40/100 Interview: maximum score 60/100
Examination	The interview consists of n. 2 identical questions for all candidates, regarding the past activities
topics:	carried out by the candidate and the proposal of a research activity to be developed within the framework of the themes of the doctorate.

PH.D SCHOOL IN ENGINEERING SCIENCE

PH.D. COURSE OF CIVIL, ENVIRONMENTAL AND BUILDING EINGINEERING AND ARCHITECTURE

with the following curricula: 1) CIVIL, ENVIRONMENTAL AND BUILDING ENGINEERING AND ARCHITECTURE 2) INTEGRATED FACILITY ENGINEERING AND RESILIENT ENVIRONMENTAL

Coordinator Prof. Francesco Fatone

Scientific	ICAR/01, ICAR/02, ICAR/04, ICAR/06, ICAR/07, ICAR/08, ICAR/09, ICAR/10, ICAR/11, ICAR/14, ICAR/17,
Areas:	ICAR/18, ING-IND/25, GEO/05, L-ANT/07, ICAR/03, IUS/07, ICAR/19

Method of selection	Examination based on qualifications: maximum score 30/100 Interview: maximum score 70/100
Examination topics:	Curricula "Civil, Environmental and Building Engineering and Architecture" and "Integrated Facility Engineering and Resilient Environmental" Technical Architecture, Building Production, Construction Science, Construction Technique, Concrete and Steel Structures, Buildings in seismic areas, Road materials and pavements, Road maintenance and safety, Hydraulics, Hydraulic constructions, Fluid mechanics, Environmental
	hydraulics, Maritime hydraulics, Maritime constructions, Geotechnics, Land Foundations and





Consolidation, Special Geotechnical Works, Environmental Geotechnics, Applied Geology, Chemical Plants, Sanitary Environmental Engineering, History of Architecture, Design, Survey, Architectural Composition, Restoration, Topography, Safety at work and on construction sites, Archaeology, History of architecture, Drawing, Relief, Architectural Composition, Restoration.

PH.D. COURSE OF INFORMATION ENGINEERING

with the following curricula:

1) BIOMEDICAL, ELECTRONICS, TELECOMMUNICATION ENGINEERING AND NANOTECHNOLOGY

2) INFORMATICS, MANAGEMENT AND AUTOMATICS ENGINEERING

Coordinator Prof. Franco Chiaraluce

Scientific	ING-INF/01, ING-INF/02, ING-INF/03, ING-INF/04, ING-INF/05, ING-INF/06, ING-IND/31, ING-INF/07,
Areas:	MAT/09, SECS-P/06, FIS/01, MED/09, ING-IND/35, ING-IND/33, CHIM/07

Method of selection	Examination based on qualifications: maximum score 30/100 Interview: maximum score 70/100						
Examination topics:	Curriculum "Biomedical, Electronics, Telecommunication Engineering and Nanotechnologies": General issues on the following interdisciplinary topics: Electromagnetic fields; Antennas; Microwaves; Photonics; Nano-electronics and Nano-photonics; Biological systems models; Bioengineering of the physiological systems; Biomechanics of movement; Data processing and biological signals; Electronics; Telecommunications; Electrotechnics; Electrical measurements; Microelectronics; Technologies for telecommunications systems; Circuits and algorithms for signal processing; Cryptography and techniques for information protection; Network security. Curriculum "Informatics, Management and Automatics Engineering": General issues on the following interdisciplinary topics: Automatics; Control and filtering; Economics-management engineering; Interpretation and simulation of the behavior of physiological systems; Mechatronics; Derational research; Robotics; Information systems; Intelligent systems; Data analytics; Data science; Software security						

A copy of the list of University exams taken and grades achieved is required when submitting
the application, in addition to other qualification documents, in accordance with art. 4 of the Call
for Applications.



UNIVERSITÀ Politecnica Delle Marche

PH.D. COURSE OF INDUSTRIAL ENGINEERING

with the following curricula: 1) MECHANICAL ENGINEERING

2) ENERGY ENGINEERING

3) MATERIALS ENGINEERING

Coordinator Prof. Giovanni Di Nicola

Scientific Areas:	ING-IND/06, ING-IND/13, ING-IND/14, ING-IND/15, ING-IND/21, ING-IND/16, ING-IND/17, ING-IND/09 ING-IND/10, ING-IND/11, ING-IND/22, ING-IND/12, FIS-01, MAT/03, MAT/05, ING-IND/08
Method of selection	Examination based on qualifications: maximum score 30/100 Interview: maximum score 70/100
Examination topics:	The candidates will be interviewed about their past and present research activities and about their proposal for a Ph.D. research project, related to the topics of the industrial engineering course, with particular reference to the research fields related to the three curricula, as listed below: Curriculum "Mechanical Engineering": Drawing and Methods of Industrial Engineering, Applied Mechanics, Robotics, Metallurgy, Mechanica and Thermal Measurements, Biomedical Instrumentation, Mechanical Design and Machine Construction, Manufacturing systems and technologies. Curriculum "Energy Engineering": Energetics, environmental engineering physics, Industrial Engineering physics, Fluid mechanics, Industrial plants, Mechanical plants, Logistics, Machines, Energetic systems. Curriculum "Materials Engineering": Biomaterials, Corrosion and materials protection, Construction material science and technology, Plastic and composite technology, Technologies for Waste treatment and pollution control, Experimental material physics.

PH.D. SCHOOL OF MEDICINE AND SURGERY

PH.D. COURSE OF HUMAN HEALTH

Coordinator Prof. Mario Guerrieri

Scientific Areas:	BIO/09, BIO/16, BIO/17, MED/04, MED/06, MED/09, MED/12, MED/13, MED/16, MED/18, MED/26, MED/33, MED/34, MED/35, MED/44, MED/15, MED/46						
Method of selection	Examination based on qualifications: maximum score 40/100 Interview: maximum score 60/100						
Examination topics:	Physiology, Human Anatomy, Histology, History of Medicine, General Pathology and Clinical Pathology, Medical Oncology, Internal Medicine, Gastroenterology, Endocrinology, Blood Diseases, Rheumatology, General Surgery, Plastic Surgery, Neurology, Neurosurgery, Musculoskeletal System Diseases, Physical Medicine and Rehabilitation, Cutaneous and Sexually Transmitted Diseases, Occupational Medicine.						





When submitting the application, in accordance with the art. 4 of the Call for Applications, students shall submit, in addition to other qualification documents, the following documents: - **Max. 5 research works published** on Pubmed. Only English publications rewieved on Pubmed will be considered valid. Abstracts or other types of publications will not be examined.

A research work in English, as defined in the model attached to the Call for Applications. The presentation of the research should be in English (**annex B**). There will be an English test for those who won't present their work in English.

PH.D. COURSE OF BIOMEDICAL SCIENCES

Coordinator Prof. Carlo Catassi

Scientific	BIO/10,	MED/11,	MED/01,	MED/08,	MED/17,	MED/28,	MED/38,	MED/40,	MED/41,	MED/43,
Areas:	MED/10,	BIO/14, N	4ED/07							

Method of	Examination based on qualifications: maximum score 40/100			
selection	Interview: maximum score 60/100			
Examination topics:	Applied Physics, Biochemistry, Applied Biology, Pharmacology, Medical Statistics, Microbiology and Clinical Microbiology, Pathological Anatomy, Respiratory System Diseases, Cardiovascular Diseases, Infectious Diseases, Pediatrics Surgery and Child Health, Urology, Odontostomatological Diseases, Otolaryngology, Diagnostic Imaging and Radiotherapy, Neuroradiology, General and Specialized Pediatrics, Gynecology and Obstetrics, Anaesthesiology, General and Applied Hygiene, Forensic Medicine, Physiology, General Pathology.			

When submitting the application, in accordance with the art. 4 of the Call for Applications,
students shall submit, in addition to other qualification documents, the following documents:
- Max. 5 research works published on Pubmed. Only English publications rewieved on Pubmed
will be considered valid. Abstracts or other types of publications will not be examined.
- A research work in English, as defined in the model attached to the Call for Applications
(annex B). The presentation of the research should be in English. There will be an English test
for those who won't present their work in English.

PH.D. COURSE OF LIFE AND ENVIRONMENTAL SCIENCES

with the following curricula:

1) MARINE BIOLOGY AND ECOLOGY

2) BIOMOLECULAR SCIENCES

3) CIVIL AND ENVIRONMENTAL PROTECTION

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Coordinator Prof. Paolo Mariani

Scientific	FIS/07.	CHIM/01.	CHIM/03,	CHIM/06.	GEO/01.	M-GGR/01,	BIO/01,	BIO/04.	BIO/05,	BIO/06.
Areas:	BIO/07.	BIO/09. B	IO/10, BIO	/11. BIO/13	8. BIO/16.	BIO/18, BIC)/19. MFI)/07. AGR	216. ING	-IND/11.
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UNIVERSITÀ Politecnica Delle Marche

	ING-IND/26, GEO/12			
Method of selection	Examination based on qualifications: maximum score 30/100. Max 20/100 for the Research Proposal submitted, and indicated in the "Examination topics". Minimum score for admission to the interview is 15/100. Interview: maximum score 70/100			
	Candidates will be interviewed on subjects related to the Academic Fields and Disciplines List (Settori Scientifico-Disciplinari) of reference for the Doctoral Course and on their previous scientific activities (including the topic of their master thesis). They will be also asked to present their PhD research proposal. Two turns of examinations, a "regular session" and a "special session" will be held for the XXXVII PhD cycle. For the regular session (sessione ordinaria), the research proposal should refer to one of the topics listed below, and identified among the different scientific areas of the PhD program; for the special session (sessione straordinaria), the			
	research proposal should refer to one of the specific topics describing the new open positions.			
	The research topics identified for the ordinary session of the XXXVII cycle are the following:			
	Curriculum Biomolecular Sciences			
	environmental bacteria			
	 Design of organic and peptidic compounds targeting the translation of specific mRNAs involved in the development of different types of cancer 			
Evamination	 Multifunctional Role of fermenting yeasts in food and beverages matrices: selection from natural environments, molecular identification, physiological and technological characterization, bio-control action 			
topics:	 Skeletal muscle ageing and physical exercise. Role of neuroendocrine regulators of metabolic functions: a morphofunctional approach 			
	Curriculum Marine Biology and Ecology			
	traits and shelf-life			
	 Microbiomes of marine invertebrates in extreme environments 			
	• Characterization, conservation and restoration of marine biodiversity trough taxonomic tools			
	and/or participatory approaches			
	Curriculum Civil and Environmental Protection			
	Biogeochemical cycles of pollutants in the marine environment			
	Presence, behavior and risk assessment of pharmaceuticals in aquatic ecosystems Soarch and rescue operations for large scale emergencies at soa			
	 Climate Change Adaptation, disaster risk reduction and social protection in developing countries 			
	Candidates will also explain the reasons for choosing the topic of their Research Proposal and			
	how they intend to develop it in practice. The Committee will verify the aptitude of the candidate for scientific research. Linguistic proficiency in English will also be assessed.			





Overall evaluation criteria: clarity, competence and methodological accuracy of exposition.

When submitting the application, in accordance with the art. 4 of the Call for Applications, students shall submit, in addition to other qualification documents, the following documents: - A PhD research proposal in English, as defined in the model attached to the Call for Applications (annex C) and referring to the issues identified in the context of doctoral research activities. The presentation of the research will be exposed if possible in English during the interview.
It should be noted that: - candidates may submit only one research proposal; - In case of admission, the research proposal submitted will not necessarily be assigned to the student.
- abstract of the thesis carried out (or in progress) for the achievement of the qualification that allows access to the Doctorate (Specialist or master's degree / old system degree / AFAM second level academic degree / academic qualification obtained abroad) of maximum 5,000 characters spaces included