ANNEX.1A

UNIVERSITA' DEGLI STUDI DEL MOLISE Area Innovazione e Sviluppo

Dottorato in BIOSCIENZE E TERRITORIO (DOT1339138) PhD in BIOSCIENCES AND TERRITORY Coordinator: prof. Gabriella Stefania SCIPPA

Length of course	1st November 2016 – 31st October 2019
Educational targets	The PhD Course in Biosciences and Territory aims to develop advanced scientific and technological abilities required to carry out highly qualified autonomous research activities, even with an interdisciplinary approach, to apply to the fields of environmental biology, territory planning, management and monitoring, computer science and mathematics. Curricula:
	 Environmental biology: anns to develop highly quanted researchers with multidisciplinary skills, able to plan and carry out autonomously basic and applied research concerning the physical, chemical and biological interactions of the various biotic and abiotic environmental components. Computer science-Mathematics: aims to provide wide-ranging and in depth know-how on a) computer science and mathematics, involving historical and epistemological knowledge as well to create synergies between computer science, mathematics and statistics b) information systems, software engineering, basic knowledge for images processing, for numerical analysis and for exact science methodology and epistemology. Territory: intends to prepare researchers qualified to deal, by using innovative integrated approaches, with different territory issues as environmental safeguard, social and economical development, planning of system defenses against natural and enthematics risks.
Admission	- A University degree obtained after 2-year specialization
requirements	courses
	 A University degree (old university legislation) Foreign academic qualification already declared equipollent by competent Italian authorities or deemed equivalent for the sole purposes of the competition.
Total available	Total available positions 9:
positions	- 7 positions with scholarship
	- 2 positions without scholarship
	Curriculum Territory
	3 positions with scholarships and 1 position without scholarship Curriculum Environmental Biology

	3 positions with scholarships
	Curriculum Computer science-Mathematics
	1 position with scholarship, 1 position without scholarship
Exams - Modalities of admission	Italian candidates • Evaluation of qualifications and project proposal annexed to the application • Interview in Italian or English language • Language: compulsory knowledge of English language
	 <u>Italian candidates residing abroad</u> Evaluation of qualifications and project proposal annexed to the application Possible interview in videoconference. A Skype contact is compulsory
	 <u>Foreign candidates</u> Evaluation of qualifications and project proposal annexed to the application Interview in English language Language: compulsory knowledge of English language <u>Foreign candidates residing abroad</u> Evaluation of qualifications and research project proposal annexed to the application
	 Possible interview in videoconference. A Skype contact is compulsory
Interview	<u>Place</u> : Università degli Studi del Molise, Dipartimento di Bioscienze e Territorio, Pesche (IS) <u>Date</u> : starting from <u>28th September 2016</u> at 10.00 according to the agenda established by the commission based on the number of the admitted to the interview.
Other assessable qualifications	 Qualifications evaluated up to 20/80 points: Final degree mark; Scientific publications on peer-reviewed journals (max. 3), participation to national and international congresses with oral presentations and posters; Other qualifications considered evaluable (study grants, awards, courses attended, Masters, Erasmus or study programs abroad, work experiences, etc)
Criteria for evaluating the exams	Evaluation of qualifications is preparatory in order to be admitted to the tests. All candidates having scored at least 15/80 and 15/80 for the project proposal annexed to the application will be considered suitable for the interview. The scores will be published, as soon as available,

	and before the interview, on the web site
	http://www.unimol.it/ricerca/dottorati-di-ricerca-2/bandi-in-evidenza/
	Scored at most 20/80 for the titles
	scored at most 60/80 for the project presentation:
	20/80 for the research project proposal annexed to the application form
	40/80 for the oral presentation and discussion of the research
	project proposal annexed to the application form
Examination themes	Candidates must present together with the filled application form a
	research project proposal with the date and signature. The proposal will
	be discussed during the oral interview.
	The research project the candidate intends to develop during the PhD
	program and that must be annexed to the application must have a
	project proposal must be on one of the following themes:
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	1.Curriculum - Territory:
	A) Ecosystem services of the trees outside forest in relation to
	landscape changes
	B) Ecosystem services and planning for the development of the
	inner areas
	C) Evaluation of the effects of vegetation cover changes and
	degradation phenomena on the dynamics of slope and valley
	D) Nature 2000 network: evaluation of the threats and
	conservation tools
	E) Analysis and modeling of the mechanical response of soils for
	understanding the behavior of geotechnical systems and the
	soil-structure interaction, under seismic loadings.
	F) Advanced techniques for diagnosis and assessment of existing
	structures, with particular reference to those belonging to
	architectural and historical heritage
	Scholarshin cofinanced by Istitute Agrarie S. Michala all'Adiga _
	Fondazione Mach:
	A) Remote and proximal sensing tools for mountain forest
	ecosystem analysis
	2.Curriculum - Environment:
	 A) Use of microorganisms for environmental recovery B) Multidisciplinary analysis of the interactions between plants
	and biotic and/or abiotic environmental components
	C) Use of plants for environmental "green technologies"
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]	D) Environment impact on the cellular processes involved in cancer pathogenesis
]	E) Analysis of the transduction pathways activated by
	environmental factors in human cells
]	F) Integrated analysis of morphological, biological and molecular data of plants in different ecological contents
	G) Study of morphological and functional adaptations of plant species to environmental factors
	H) Chemical and physical analysis of plant secondary metabolites and their relationships with the environment.
	3.Curriculum - Computer Science:
	A) Automated software engineering
]	B) Software quality and evolution
	C) Strategic Use of Technology in Teaching and Learning Mathematics
	D) Numerical methods and algorithms for medicine and biology
For coul	the oral presentation and discussion of the project candidates d use information technology supports.