

<p align="center">PhD Programme in EARTH AND ENVIRONMENTAL SCIENCES AND TECHNOLOGIES</p> <p align="center">Curriculum 1: GEOLOGICAL EVOLUTION OF THE TERRITORY Curriculum 2: APPLIED GEOLOGY AND ENVIRONMENTAL TECHNOLOGIES Curriculum 3: GEOSPHERE-BIOSPHERE INTERACTION</p>	
DISCIPLINARY SCIENTIFIC AREAS	04 - EARTH SCIENCES; 05 - BIOLOGICAL SCIENCES; 08 - CIVIL ENGINEERING AND ARCHITECTURE; 09 - INDUSTRIAL AND INFORMATION ENGINEERING; 03 - CHEMICAL SCIENCES; 07 - AGRICULTURAL AND VETERINARY SCIENCES
COORDINATOR	PROF. GABRIELE CRUCIANI
HEAD DEPARTMENT	DEPARTMENT OF CHEMICAL AND GEOLOGICAL SCIENCES
DURATION	3 YEARS
LEARNING OUTCOMES AND RESEARCH TOPICS	<p>The PhD in Earth and Environmental Sciences and Technologies promotes a concrete and conscious knowledge of the territory and its resources, as well as the protection and promotion of the natural environment in its biotic and abiotic aspects.</p> <p>The qualifying cultural core of the training project is represented by a systemic, integrated and interdisciplinary approach at all scales (from the molecular to the regional and ecosystem) to the study of the territory understood as a physical-natural environment and of the technologies necessary for its conservation or rehabilitation. The interweaving between basic and applied disciplines, and between abiotic and biotic skills, in line with current international research trends, is underlined.</p> <p>The Doctorate includes courses, seminars and schools, participation in national and international conferences, training and improvement internships in Italian and foreign research structures.</p> <p>The primary educational objective is the achievement of autonomy in research, in particular the ability to produce scientific publications in international journals.</p> <p>For Cycle XL, the Academic Board has identified, for each curriculum, the following research topics as priorities, although not exclusive:</p> <p>The GEOLOGICAL EVOLUTION OF THE TERRITORY curriculum includes research topics in the main basic disciplines of Earth Sciences such as: regional geology, geomorphology, mineralogy, paleontology, petrology, sedimentology, stratigraphy, tectonics, volcanology, genesis and prospecting of mineral deposits. The main themes of the research are aimed at the study, knowledge, evolution and mapping of the territory and possibly of its resources.</p> <p>The APPLIED GEOLOGY AND ENVIRONMENTAL TECHNOLOGY curriculum includes research topics in the field of applied geology and environmental science and technology, also aimed at promoting the circular economy. The main topics are: the characterization and reclamation of contaminated sites, defense of the soil, the environment and cultural heritage, the cultivation and enhancement of mineral resources, hydrogeology and the qualitative and quantitative protection of water resources, also in relation to changes climate change, remote sensing, management, treatment and valorisation of waste, wastewater and gaseous emissions.</p> <p>The GEOSPHERE-BIOSPHERE INTERACTION curriculum includes topics in the research fields of botany, pedology, mineralogy and</p>

	interactions between the geosphere and the biosphere also aimed at environmental recovery and/or restoration through the enhancement of native flora and agrobiodiversity. The main topics are: plant systematics, environmental botany, the physiological processes of plants at the interface with the soil and the atmosphere, such as photosynthesis and transpiration, rhizobiology including the study of plant secondary metabolites, the biogeochemical dynamics of soil-plant-atmosphere systems, plant ecophysiology and biominerals, paleo and archaeobotany.
ELIGIBILITY AND OTHER REQUIREMENTS FOR CANDIDATES	EVERY ITALIAN 2ND CYCLE DEGREE (<i>LAUREA MAGISTRALE/SPECIALISTICA/VECCHIO ORDINAMENTO</i>) AND EQUIVALENT AND SUITABLE FOREIGN ACADEMIC DEGREES Adequate knowledge of scientific English; basic computer skills (word processing programs, spreadsheets, databases and GIS) Foreign candidates: Degrees equivalent to those mentioned above; adequate knowledge of Italian or English and, in any case, scientific English; basic computer skills (word processing programs, spreadsheets, databases and GIS).
ADMISSION TESTS	ASSESSMENT OF QUALIFICATIONS AND CURRICULUM VITAE, AND VIDEOCONFERENCE INTERVIEW The interview will mainly focus on the presentation and discussion of the candidate's research project (to be written using the form available on the webpage https://unica.it/dottoratiricerca - "Instructions for registration to the competition and forms - Annex C"), in order to assess the adequacy of the profile with regard to personal competence in the disciplinary field of the project, aptitude for scientific research and linguistic knowledge (English language).
POSITIONS	1
SCHOLARSHIPS	1 funded by by Ministerial Decree no. 630/2024
CONTACT PERSON	PROF. GABRIELE CRUCIANI EMAIL: gcrucian@unica.it - TEL. + 39 0706757709
WEBSITE	http://dottorati.unica.it/stta/
SCHOLARSHIP FUNDED BY MINISTERIAL DECREE NO. 630/2024	
SCHOLARSHIP 1 - CUP F22B24000300005	
RESEARCH PROJECT	GEOSITES in the vast territory of the GeoMining Park areas: identification and classification, study of connection routes between the various mining areas, their definition, valorisation and usability in a national and international context (UniCa- PGM Framework Agreement)
PRINCIPAL INVESTIGATOR	Prof. Giovanni Battista De Giudici
DESCRIPTION OF DOCTORAL TRAINING	The doctoral training includes training dedicated to the valorisation and management of the geosites in the MMP. The training path envisages phases of training at UNICA, phases of activity at the PGM, and phases of activity abroad at other geoparks of international standing and/or of the UNESCO network. The trainee must integrate geology disciplines in an innovative context in terms of the technologies to be used and the scientific skills involved. UniCa and PGM have signed a five-year framework agreement in which this project is included. Mobility abroad of the doctoral student is envisaged, with internships and training periods at international mining geoparks and foreign institutes qualified in the specific themes of the Park's geosites.

COMPANY	Parco Geominerario Storico Ambientale della Sardegna Address: via Monteverdi 16, 09160 Iglesias, Italy Contact person: Dr. Fabrizio Atzori
NO. OF MONTHS TO BE SPENT IN THE COMPANY	12
FOREIGN INSTITUTION	Geoparco(i) rete Unesco ORE of The ALPS Address: Franz-Mohshammer Platz 12 5500 Bischofshofen, Austria
NO. OF MONTHS TO BE SPENT IN THE FOREIGN INSTITUTION	6