

PhD Programme in EARTH AND ENVIRONMENTAL SCIENCES AND TECHNOLOGIES	
Curriculum 1: GEOLOGICAL EVOLUTION OF THE TERRITORY Curriculum 2: APPLIED GEOLOGY AND ENVIRONMENTAL TECHNOLOGIES Curriculum 3: GEOSPHERE-BIOSPHERE INTERACTION	
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 XLI, 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, ore formation and mining exploration. 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 mining and enhancement of mineral resources, hydrogeology and the qualitative and quantitative protection of water resources, also in relation to climate change, remote sensing, management, treatment and remediation of waste, wastewater and gaseous emissions.</p> <p>The GEOSPHERE-BIOSPHERE INTERACTION curriculum includes topics in the research fields of botany, pedology, mineralogy and 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</p>

	secondary metabolites, the biogeochemical dynamics of soil-plant-atmosphere systems, plant ecophysiology and biominerals, paleo and archaeobotany.
ELIGIBILITY AND OTHER REQUIREMENTS FOR CANDIDATES (ART. 2 - NOTICE OF COMPETITION)	<p>EVERY ITALIAN 2ND CYCLE DEGREE (<i>LAUREA MAGISTRALE/SPECIALISTICA/VECCHIO ORDINAMENTO</i>) AND EQUIVALENT AND SUITABLE FOREIGN ACADEMIC DEGREES</p> <p>Adequate knowledge of scientific English; basic computer skills (word processing programs, spreadsheets, databases and GIS)</p> <p>Foreign candidates:</p> <p>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).</p>
ADMISSION TESTS FOR CANDIDATES APPLYING FOR THE ORDINARY POSITIONS	<p>ASSESSMENT OF QUALIFICATIONS AND CURRICULUM VITAE, AND IN-PERSON INTERVIEW</p> <p>The interview will aim to ascertain the candidate's ability to orient on the main areas of study inherent in the doctorate and to verify his/her analytical, processing and communication skills.</p> <p>During the interview, a three-year research project (min. 8,000/max 16,000 characters - excluding title and bibliographic references) proposed by the candidate will be discussed, which must be presented, in addition to the documents required by art. 3 of the call for applications, by uploading it to the system by the deadline (file name: research_project_surname_name).</p> <p>The interview may also be conducted in English (other foreign languages may be taken into consideration).</p> <p>During the interview, the knowledge of scientific English will be verified by reading and translating a passage proposed by the Committee.</p> <p>Candidates unable, for justified reasons, to take the interview at the established venue, may be granted the possibility of carrying it out by videoconference, on the same date and time established for face-to-face interviews, according to the procedure indicated in the notice of competition.</p>
ADMISSION TESTS FOR FOREIGN CANDIDATES APPLYING FOR THE RESERVED POSITION	<p>ASSESSMENT OF QUALIFICATIONS AND CV, ONLINE INTERVIEW</p> <p>During the interview, a three-year research project (min. 8,000/max 16,000 characters - excluding title and bibliographic references) proposed by the candidate will be discussed, which must be presented, in addition to the documents required by art. 3 of the competition announcement (certificate attesting the award of a 2nd level foreign degree needed to access a PhD programme, including exams and marks, with a translation in Italian or English; certificate attesting the award of a 1st level foreign degree, including exams and marks, with a translation in Italian or English; signed Curriculum Vitae preferably in EU format, in English or Italian; additional qualifications, certifications, up to five publications, front and back color copy of a not expired passport, with photo), by uploading it to the system, by the deadline of the announcement (file name: research_project_surname_name).</p> <p>The interview will be conducted in English or, possibly, in Italian, and will focus mainly, but not exclusively, on the experience gained by the candidate in the specific topics of the doctorate and on the topics that the same would propose as a possible object of the activity to be developed during the three-year doctorate.</p> <p>Reference letters (up to 3) must be written in English, using the form available on the webpage https://web.unica.it/unica/en/studenti_s01_ss05.page (How to apply for PhD selection: Guidelines and forms- Annex D), by a university professor or an expert in the research fields of the PhD programme, on letterhead of their institution, dated and signed. Evaluators will send their letters directly to the email address phdcall_referenceletter@unica.it (object: surname and name of the candidate being evaluated and name of the PhD programme for which he/she is applying).</p>
POSITIONS	9, 1 of which without scholarship, and 1, with scholarship, reserved for a

	foreign candidate with a 2nd level degree awarded abroad
SCHOLARSHIPS	<p>8:</p> <ul style="list-style-type: none"> - 1 funded by the University of Cagliari (funds from University budget) - 7 funded with funds from PR FSE+ 2021-2027 (PNR 2021-2027 research and innovation area: Climate, Energy, Bio-economy, Natural Resources, Agriculture, Environment - S3 Specialisation Area: Aerospace; Tourism, Culture and Environment; Intelligent Energy Production Networks; Agro-industry): <ul style="list-style-type: none"> • 3 on Line A, reserved for university female and male graduates under 35 years at the time of application • 4 on Line B, reserved exclusively for university female graduates under 35 years at the time of application
CONTACT PERSON	<p>PROF. GABRIELE CRUCIANI</p> <p>EMAIL: gcrucian@unica.it - TEL. + 39 0706757709</p>
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