PhD Course in	GEOSCIENCES
Coordinator	Prof. Nicola Sciarra Department: Science E mail: nicola.sciarra@unich.it
Duration	3 years
Disciplines	Italian accademic declaratories: GEO/02; GEO/03; GEO/04; GEO/05; GEO/06; GEO/07; GEO/08; GEO/09; GEO/10; GEO/11; L-ANT/08 (Items in Engineering Geology, Structural Geology, Geophysics, Planetary Geology, Geochemistry, Petrology, Geomorphology, Archaeology)
PhD Programme description	This Ph.D. project covers wide themes of the Earth Sciences in order to contribute to the definition of a researcher who can be competitive in numerous branches of scientific research and in the professional field. The general platform of the project includes topics covering natural and man-made environments, related hazards (geo-hydrological risk, seismic hazard and risk, seismic microzonation, environmental risk), geo-resources, and planetary geology. In this context, it is possible to develop specific doctoral topics capable of generating scientific and applicative spin-offs in line with an increasingly complex society. The research activity follows a first period of basic training, developing collaborations with research institutions and foreign universities that will allow doctoral students to eventually obtain Italian and foreign degrees (in co-tutorship) and possible additional certification as Doctor Europaeus or International Doctorate. The research topics will include: Applied Geology and Geomorphology, Hydrogeology, Multiscale Tectonics and 3D Seismotectonics, Planetary Sciences, Environmental and Cultural Heritage Protection, Geostatistics and Computational Modelling. Geology and Geomorphology applied to environmental management, today as never before are the basis for interconnected interdisciplinary research ranging from the current climatological analysis to that of the entire Quaternary compared to the Anthropocene, to the study of new geo-environmental hazard matrices compared with anthropogenic ones, to geological and geo-hydrological hazard assessment. This research approach is aimed at defining new visions of spatial planning related to short and long-term climate change impacts and the definition of adaptation strategies. The topics are approached with innovative and interconnected methodologies and technologies: from classical geomorphological ground surveying to digital and satellite mapping, to the assessment of natural susceptibilities with numerical and local seismic response modelling. The Geo-hydrological theme consists of the interrelationships between supply, circulation and emergence in aquifers as a function of meteorological, hydrological, hydrogeological and hydro-chemical experimental parameters; quantitative and qualitative implications on hydrodynamics, water chemistry and vulnerability of karst, fissured and porous aquifers also with the help of numerical analysis, mathematical modelling, hydrogeological mapping, subsurface geophysical exploration and interpretation of meteorological Radar data. The theme of Multiscale Tectonics and 3D Seismotectonics focuses on the study of tectonic deformation at regional and local scales, the genesis and evolution of orogenes and fault systems, the relationships between earthquakes and active, Quaternary and inherited geological structures, on earthquake source mechanisms and seismic hazard. Ph.D. students participating in the Planetary Sciences path will gain a comprehensive understanding of planetary geology through characterization of potential planetary analogues, remote sensing, theoretical modelling, planetary physics, astrobiology, spacecraft instrumentation and space mission development. The program provides the skills needed to participate in the dynamic space industry both in Europe and internationally. Current and future space missions include objectives as diverse as Mercury, Venus, Mars, asteroids, comets and other parts of the outer Solar System, gas giant planets and their satellites, to Kuiper Belt objects. The Environment and Cultural Heritage theme focuses on environmental problems and resources combined with the preservation of cultural heritage, from geotourism to

	archaeometry, from pollution mitigation to the characterization of geo-complex materials or materials of archaeological or historical and artistic value. Scientific methodology is directed toward tools and new raw materials and sustainable processes for the purposes of ecological transition, green technology and the transition away from fossil fuels. This theme enables the development of the ability to analyse all kinds of materials from minerals to pigments, glasses, alloys, ceramic and high-tech materials as well as even hazardous ones such as asbestos and microplastics. The PhD Students are required to spend a stay abroad for a minimum period of 6 months during the three years.
PhD Website	https://www.scuolasuperiore.unich.it/offerta-formativa
Available positions	**n. 2 positions** of which:
	n. 1 scholarship funded by Abruzzo Region on the research topic: Bio-geomorphological studies on Adriatic Coast
	n. 1 scholarship funded by the Italian Spatial Agency on the research topic: Geological mapping of lunar landing sites and the MATISSE webtool
Admission requirements	See art. 1 PhD Call 40th cycle - Academic Year 2024/2025 Si precisa che potranno partecipare solo i laureati nelle discipline successivamente indicate: • CLASSE LM02 - Archeology • CLASSE LM03 – Landscape Architecture • CLASSE LM04 – Architecture and Building Engineering-Architecture • CLASSE LM06 - Biology • CLASSE LM10 - Preservation of Architectural and Environmental Heritage • CLASSE LM17 - Physics • CLASSE LM23 - Civil Engineering • CLASSE LM24 - Building Systems Engineering • CLASSE LM29 - Electronics Engineering • CLASSE LM35 - Environmental Engineering • CLASSE LM44 - Mathematical-Physical Modelling for Engineering • CLASSE LM74 - Geological Sciences and Technologies • CLASSE LM75 - Science and Technology for the Environment and the Territory • CLASSE LM79 - Geophysical Sciences
Language	English knowledge is required.
Exam Date	The oral test (interview) will be held on December 11th 2024, starting from 9:00 am, in the INGEO Department Meeting Room - 4th floor of the former Rectorate Building at the University Campus Madonna delle Piane - Chieti Scalo. Candidates who request to take the oral test remotely will be contacted by e-mail by the Commission to define the date and time of the interview.

PhD Course in	NEUROSCIENCE AND IMAGING
Coordinator	Prof. Carlo Sestieri Department: Neuroscience, Imaging and Clinical Sciences E mail : c.sestieri@unich.it
Duration	3 years
Disciplines	Imaging, Psychiatry, neurology, radiology, medical genetics, neuropsychology, cognitive neuroscience, computational neuroscience, artificial intelligence
PhD Programme description	The course aims to provide a high quality interdisciplinary training of the third level to researchers in the field of neuroscience. In addition, the doctorate course aims to form high-profile professional figures in the field of diagnostic imaging and research and development of innovative instrumentation, as well as high-qualification operators in the field of the national health system, the private health system, and the health industry. Other formative objectives are the development of the ability to relate to scientific research, in particular the ability to think and find solutions to problems in a critical, creative and, at the same time, scientifically rigorous way, the ability to conceive and implement a short research program, medium and long term, the ability to plan and edit a fund request, to communicate with the scientific community and to effectively present the results of one's own research work. The PhD Students are required to spend a stay abroad for a minimum period of 6 months during the three years.
PhD Website	https://www.scuolasuperiore.unich.it/offerta-formativa
Available positions	n. **1 position** funded by the MD-PhD program – Department of Excellence 2018-2022
Admission requirements	See art. 1 PhD Call 40th cycle - Academic Year 2024/2025
Language	Knowledge of English language is required
Exam Date	The oral test (interview) will take place on December 11th 2024, starting from 9:00 am, in the INGEO Department Meeting Room - 4th floor of the former Rectorate Building at the Madonna delle Piane University Campus - Chieti Scalo. Candidates who request to take the oral test remotely will be contacted via email by the Commission to define the date and time of the interview.