

Geoenvironmental Resources and Risks

UNICAM, in its effort to counter gender stereotypes, has undertaken awareness-raising initiatives to give greater linguistic visibility to differences. When the masculine form is used in this text for the sole purpose of simplification, it is intended to be inclusive of all individuals operating within the university community.

Master Degree
Second Cycle Degree
duration 2 years
ECTS credits 120
Campus Location Camerino

School of Science and Technology
Geology Division
via Gentile III da Varano 7

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INTRODUCING THE MASTER

Geosciences rule our life on the Planet! The UN Agenda 2030 (<https://www.coe.int/en/web/un-agenda-2030>) demonstrates how geologists are the professionals who can most contribute to support and educate the society to understand the Earth as a complex but fragile system and are involved in attaining the Agenda goals. There is a growing need for geologists all over the world who can face, using modern, quantitative and interdisciplinary technologies, the critical challenges of the Earth future, such as:

- ensure water quality and quantity
- identify and recover energy and mineral resources
- minimize the impact of natural hazards to help ensure safer, more resilient communities
- provide underground knowledge to build stable infrastructures
- monitor soil quality for a healthy environment and sustainable agriculture
- evaluate and mitigate the effects of climate change
- support a sustainable use of land and georesources
- understand the dynamics and evolution of the Earth and other planets
- analyze and help preserve our cultural and environmental heritage.

This Master of Science (MSc) course provides knowledge at an advanced level and practical expertise in fields of Earth Sciences related to the natural resources and the environmental hazards, including their effects on buildings and infrastructures. aiming to prepare a geologist able to operate with managerial competences in:

- a) the study, exploration, exploitation and sustainable use of georesources (water, energy and geomaterials)
- b) the analysis of geological hazards and risks (monitoring, evaluation, mitigation management, prevention)
- c) the interdisciplinary geoenvironmental aspects of the interaction between terrains and built environment, especially in seismic areas.

The combination of theory, practice, fieldwork and laboratory activities, as well as the acquisition of competences in experimental/analytical methods and data processing and modeling, will contribute to the cultural growth of the students. To specialize in the area of interest, up to 28 credits can be chosen to build up a personalized study plan, together with the thesis (30 credits) which requires a semester of independent experimental (field/lab) and theoretical work. The students will have therefore 58 credits (2 semesters) to choose activities for specialization in the area of interest.

Time is also dedicated to the acquisition of interdisciplinary knowledge, especially important in addressing environmental issues (like groundwater pollution, disaster management, sustainable use of resources, effects of climate change, remote monitoring of ground movement and stability of structures/infrastructure) and transversal competences and skills (use of GIS at advanced level, specific softwares). Practical workshops carried out by geologists specialized in various fields will help introducing the students to the professional world.

Internships in private companies, territorial agencies, national and international research institutions and universities, as well as study periods abroad within the Erasmus+ framework in EU or extra-EU countries or the new national Erasmus (for exams and/or thesis), are particularly encouraged and supported by university grants. Grants for excellent and/or low-income students are available, as well as part-time jobs and grants for international students from selected countries.

Parallel to the master degree course in Geoenvironmental Resources and Risks, the student can register to the Scuola di Studi Superiori "Carlo Urbani", an institution of excellence, subject to selection procedure based exclusively on merit. For information visit: <https://scuolastudisuperiori.unicam.it>

ADMITTANCE REQUIREMENTS

- Bachelor Degrees that satisfy the requirements for access to University Master Degree courses, in the field of Geosciences, Geophysics, Environmental and Natural sciences, Civil/Environmental Engineering
- Level of language proficiency (strongly recommended): English level B2 (Independent User)

Interviews and entrance tests will take place in the first week of October. Information on admission rules for international students are available at <https://www.unicam.it/international-student>

Classes are in English and held in presence



STRUCTURE OF THE MASTER

The structure of the course is organized to be highly flexible to take into consideration different expectations of the students (Italian and international). The standard study plan covers the major topics of application of the geologist in the job market. The proposed specialization areas correspond to research projects active in UNICAM, which allow the inclusion of the student in the activities of well-established research groups. Specialization is achieved choosing among the elective courses and proposing an individual study plan.



1 st year	ECTS	2 nd year	ECTS	Specialization areas:
Groundwater resources and hydrological hazard	10	Seismic hazard	6	Water and energy resources
Environmental chemistry	6	Volcanic hazard	6	Geohazards
Geomaterials	6	Geophysical prospecting	10	Geoengineering
Petroleum geology	6	Elective courses and activities	10	Earth and planetary materials
Geostatistics	7			
Advanced field geology	5			
Elective courses and activities	18	Thesis	30	

Students can choose one of the following specialization paths or choose elective courses for a personal studyplan:

Water and energy resources - Geofluids reservoirs, Geodynamics and Tectonics, Renewable energy, Geothermics, Polluted sites remediation, Advanced GIS, Remote sensing and virtual models

Geohazards - Structural geology, Seismology, Disaster management, Marine geology, Plate tectonics, Environmental geophysics, Metamorphic geology, Computer lab for geosciences

Geoengineering - Geotechnics and Geoengineering, Elements of structural engineering, Design of geotechnical structures, Soil dynamics and earthquake engineering, Hydraulic-forestry remedial works

Earth and planetary materials - Isotopes and trace elements geochemistry, Planetary materials, Experimental petrology, Crystallography, Environmental sustainability, Geomaterials lab, Waste management, Material Science, Applied petrography

The course is organized in 4 semesters, three devoted to courses and other activities, and the last dedicated to the thesis. Lesson calendar: first semester is from beginning of October to end of January, second semester from the beginning of March to the middle of June. The lesson timetable is available on the university website in September and sent to the students' mailing list. February and June-September are reserved to exams. Field activities are carried out during the semesters, on Fridays. Field and laboratory activities are obligatory. Lessons are also available through the UNICAM virtual classrooms. The official language is English. The course attracts students from many countries interested to study in an international environment. All the activities are carried out in the Geology building, where students find classrooms, didactic/technical and scientific labs, study areas and professors' offices. The Geology building hosts the UNICAM unit of INGV-Istituto Nazionale di Geofisica e Vulcanologia (the National Institute for Geophysics and Volcanology). Academic excellences are blended with the industry experience, with good opportunities for students.

AFTER THE DEGREE

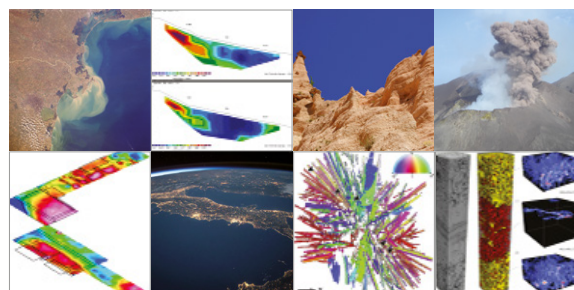
UNICAM hosts on site the examinations to access the Geologists' Board. Specialization masters and Summer Schools are organized for newly graduates or for continuing professional development and update. The Geology Division hosts the PhD program in Earth Sciences research topics, organized by the UNICAM School of Advanced Studies with a good annual number of scholarships.

PF60 programs to acquire teaching qualification are available at UNICAM.

SOME WORK POSSIBILITIES FOR GEOLOGISTS

Geologists can find employment in many fields, as independent geologists, or as employees in:

- environmental or engineering consulting companies
- construction companies for civil/public building works
- agencies and institutions dealing with geological hazards and risks, environment and land/coastal monitoring/protection (in Italy, es. Protezione Civile, Servizi Geologici, ARPA, Servizi Tecnici di Bacino, Comunità Montane, Enti nazionali e locali)
- water and energy exploration and management companies (in Italy, e.g. ENI, ENEL, ACEA ...)
- infrastructures and transportation sector (in Italy e.g. ANAS, ITALFER ...)
- mineral industry (exploitation or certification of materials, management and recycling of industrial waste, sustainability, innovation, circular economy)
- scientific dissemination (Natural Sciences Museums, Geosites and Parks, media)
- as experts in cartography, GIS and remote sensing (land planning, monitoring and protection, georesources, climate change, agriculture, archaeology and cultural heritage ...)
- as geoscientists in research institutions, labs and universities
- as science teachers in Middle and High Italian schools



CLASSIFICATIONS

UNICAM classified 1st in the evaluation by Censis 2023/24 in the group of universities with up to 10000 students.

QUALITY ASSURANCE SYSTEM

UNICAM Quality Management System Certificate ISO 9001:2015 (from AFAQ-France, a French leader and one of the first certification bodies at the global level) guarantees students the quality of services provided. The guarantee is via a rigorous analysis of internal organizational procedures and the prompt addressing of any weaknesses or shortcomings whether detected or reported by the students themselves. The Quality Management System includes the following support services for students: orientation and guidance, mentoring, International mobility, Internships and communication. These integrate with and support the educational activities, so as to contribute to the complete training of the student.

Student Services

Guidance

<https://orientamento.unicam.it/>

Scholarships

- WelcomeinUnicam for master's degrees
 - TalentinUnicam for merit students
 - Unicam/Cus per sport students
- <https://www.unicam.it/studente/servizi-studenti/borse-di-studio>

"Carlo Urbani" School of Higher Studies

<https://scuolastudisuperiori.unicam.it/>

Counseling and psychological well-being

<https://www.unicam.it/studente/servizi-studenti/servizio-di-consulenza-psicologica>

Services for Students with Disabilities and DSA

<https://disabili.unicam.it/>

Internships and Placements

<https://stage.unicam.it/>
<https://placement.unicam.it/>

Welcome and International mobility

welcoming international students and mobility programs
<https://international.unicam.it/>



Information

Open

Monday-Wednesday-Friday 10.30-13.00
 Tuesday-Thursday 15.00-17.00

Guidance

via Gentile III da Varano, 2 - 62032 Camerino
 0737 404606 - 404622 - 403727 orientamento@unicam.it

Address Student Office

via Gentile III da Varano 26 - 62032 Camerino

Ticketing: <https://segreteria studenti.unicam.it/>

Contributions and registrations

Procedure available at <https://miiscrivo.unicam.it/> from 3 luglio
 Personalized fees on the basis of the ISEE-U
 Total or partial tuition fees exemptions

More information

<https://www.unicam.it/didattica/guida-dello-studente>
 Students International
<https://international.unicam.it/> e-mail: welcome@unicam.it

Educational services, Classrooms, Lesson timetables

<https://www.unicam.it/studente>

Bachelor's Degree and Master's Degree Programmes

<https://www.unicam.it/didattica>