

## Why Enroll?

The Master in Science in Volcanology connects the work of leading scientists in the field from the University of Napoli Federico II and INGV-Vesuvian Observatory, and will provide you with a strong background on the cutting-edge topics in Volcanology. The active volcanoes in the Neaples area turn into open-air labs for enabling hands-on training and the development of a wide range of skills and abilities, such as acquisition, processing and interpretation of quantitative field and/or laboratory data; application of basic mathematical and statistical tools to the description of physical processes; geological mapping, collection, interpretation, representation and spatial analysis of data; volcanic hazard assessment; proficiency in critical analysis of scientific material from a variety of sources.

The Master's program uses the most advanced techniques of data acquisition, analysis and interpretation to build a quite targeted professional profile. Completing the Msc in Volcanology will prepare you for various careers, from more applied directions to academic careers using the skills you have acquired to monitor volcano activity, assess volcano hazard and contribute to the management of volcano risk. The Master's programme offers several possibilities for internship and traineeship in international Universities (Erasmus program) and volcano observatories.

### Reference teacher


Prof. Paola Petrosino  
paola.petrosino@unina.it



**Polytechnic and Basic Sciences School**  
[www.scuolapsb.unina.it](http://www.scuolapsb.unina.it)

**Department of Earth, Environment and Resources Sciences (DiSTAR)**  
<http://www.distar.unina.it>

National Institute of Geophysics and Volcanology - Vesuvian Observatory  
<http://www.ov.ingv.it>

**Master in Volcanology**  
<http://www.volcanology.unina.it> 

### International future student assistance

Prof. Daniele Morgavi  
daniele.morgavi@unina.it  
Prof. Paola Petrosino  
paola.petrosino@unina.it

### Student bureau - DiSTAR

Via Cintia 21, Ed. L – 80126 Napoli  
bernardo.scinia@unina.it  
Opening times:  
Tuesday, Wednesday and Thursday 9:00 a.m. to 12:00 a.m.



May 2022



UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II  
SCUOLA POLITECNICA E DELLE SCIENZE DI BASE

# SCIENCES

## MASTER OF SCIENCE VOLCANOLOGY



## EDUCATIONAL TARGETS

The two-year Master of Science program in Volcanology equips you with in-depth theoretical and experimental knowledge and skills on the physical and chemical processes that control behaviours of volcanoes and their related hazards. It provides you with a complete picture of the geological, geochemical, petrochemical and geophysical aspects, concerning both the dynamics of the volcano system and the monitoring of its activity.

The distinctive feature of the Master of Science program is the partnership with the INGV-OV (National Institute of Geophysics and Volcanology - Vesuvian Observatory), which is a unique educational opportunity and contributes to developing a competitive professional profile. Frontal instruction is complemented with field trips, laboratory trainings and activity, along with internships in Italian and international Universities, mostly in the framework of Erasmus programs.



## ADMISSION REQUIREMENTS

In order to be eligible to apply you need:

- Bachelor's (3 years minimum) in Geology, Physics or Chemistry or equivalent degree.
- Alternatively, you must hold a minimum of 60 ECTS in geology, mathematics, chemistry and informatics related subjects.
- Alternative careers or academic backgrounds will be evaluated on a case by case basis.
- English proficiency certification internationally recognized with the minimum level of language skills required in B2 (Fourth level of English within the Common European Framework of Reference for Languages - CEFR).
- If your English language proficiency level is not officially recognized, a placement test can be provided by teachers of the course.

## TRAINING PATH

The first term (Sept-Jan) of the first academic year is devoted to mandatory courses. Starting in the second term (March-June) of the same year some optional courses can be chosen from a list. The choice is completely up to the student, and should be done in accordance with the student's inclinations. In the first term of the second year the last optional course is scheduled. The last term is devoted to research for the final dissertation.

### 1<sup>st</sup> Year

Physical Volcanology	9 ECTS*
Magmatology	6 ECTS
Geochemistry of volcanic fluids	9 ECTS
Volcano seismology and geodesy	6 ECTS
Geophysical exploration of volcanic systems	6 ECTS
Statistics and mathematics for geosciences	6 ECTS
Volcanotectonics	6 ECTS

### Choose 12 credits from the following optional units

Slope stability in volcanic areas	6 ECTS
Volcanic landforms and landscapes	6 ECTS
GIS and remote sensing in volcanic areas	6 ECTS
Experimental petrology	6 ECTS
Geoarchaeology in volcanic areas	6 ECTS

### 2<sup>nd</sup> Year

Frontiers in multiparametric volcano monitoring	6 ECTS
Physical modelling of volcano processes and dynamics	6 ECTS
Volcano hazard and risk assessment	6 ECTS

### Choose 6 credits from the following optional units

Hydrogeology of volcanic areas	6 ECTS
Advanced isotope geochemistry	6 ECTS
Field volcanology	6 ECTS
Graduation Thesis	24 ECTS
Internship	6 ECTS
Italian (for foreign students)/other activities	6 ECTS

\* ECTS=CFU

## JOB OPPORTUNITIES

You will be called upon to study the past behaviour of volcanoes, contribute to probabilistic hazard estimates, monitor active volcanoes, assess their physical state and predict the evolution of their activity. Moreover, you may be asked to process geochemical and geophysical data sets to model the volcano system and assess its impact both on a local and global scale. You will gain proficiency in disseminating the correct information on the status of a volcano in pre-alarm phases or ongoing crises.

The main job opportunities following the completion of the program are to work for government agencies in hazard management, to work for volcano observatories, or in the commercial sector for either geotechnical companies or risk management and reinsurance companies. After graduation you can take the Italian national exam to become a professional geologist.

## POST-GRADUATE STUDY OPPORTUNITIES

Students who complete the MS can apply for PhD programs both in Italy and abroad, and for a second level master, offered by national and international academic and research institutions.

## LOCATION

The courses are held at Monte Sant'Angelo Campus, Building L (Naples), where also the library and the student bureau are located. You can reach the campus by bus from the Campi Flegrei metro station (Linea 2 Trenitalia), from Mostra station of Cumana railway and by several private buses from other towns in the neighborhoods of Naples. INGV-OV will host students for internships in the headquarters of Via Diocleziano, 3 km far from the campus site.

