



DIDACTIC REGULATIONS OF THE DEGREE PROGRAM VOLCANOLOGY

LM-74

School: Polytechnical and Basic Science School

Department: DiSTAR - Earth Science, Environment and Resources Department

Regulations in force since the academic year 2024-25

ACRONYMS

CCD	[Commissione di Coordinamento Didattico]	Didactic Coordination Commission
CdS	[Corso/i di Studio]	Degree Program
CPDS	[Commissione Paritetica Docenti-Studenti]	Joint Teachers-Students Committee
OFA	[Obblighi Formativi Aggiuntivi]	Additional Training Obligations
SUA-CdS	[Scheda Unica Annuale del Corso di Studio]	Annual single form of the Degree Program
RDA	[Regolamento Didattico di Ateneo]	University Didactic Regulations

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Art. 1

Object

 These Didactic Regulations govern the organisational aspects of the CdS in Volcanology (class LM-74). The CdS in Volcanology is hinged in Departmentof Earth, Environment and Resources Sciences

Source: SUA-CdS

Framework: General CdS Information

CdS name in Italian - Vulcanologia CdS name in English - Volcanology Class LM-74 Geological Sciences and Technologies Teaching language - English

2. The CdS is governed by the Didactic Coordination Commission (CCD), pursuant to Art. 4 of the RDA.

Source: SUA-CdS

Framework: Contact Person and Structure: prof. Paola Petrosino – present coordinator Collegial Management Body of the CdS – Commission for the Didactic Coordination of the Study Course

3. The Didactic Regulations are issued in compliance with the relevant legislation in force, the Statute of the University of Naples Federico II, and the RDA.

Art. 2

Training objectives

Source: SUA

Framework: A4.a – RAD

The Master Degree course in Volcanology aims to provide highly specialized skills regarding the volcano system and its functioning. The main objective is to establish a solid theoretical cultural basis, integrated with technical knowledge and practical skills, contributing to the formation of a competitive professional profile in the field of physical volcanology and geophysics in active volcanic areas.

The more specific objectives of the degree are:

- Achievement of the ability to analyze and interpret the volcano as a complex system through the application of basic methodologies, such as field surveys in volcanic areas and laboratory analyses, integrated with the most up-dated tools for acquisition, management, and processing of geological and volcanological data.
- Acquisition of the ability to analyze igneous intrusive and effusive rocks and pyroclastic products from a mineralogic-petrographic perspective.
- Acquisition of the ability to apply geophysical and geochemical methods for monitoring and surveillance of active volcanic areas.
- Acquisition of skills in using databases and analyzing geophysical data (e.g., seismic, geodetic).
- Acquisition of skills in using models for studying volcanic deformations and simulating volcanic product transport and emplacement processes.
- Acquisition of the ability to estimate volcanic hazards over different time horizons for emergency management and territorial planning.

- Acquisition of skills to actively participate in teams involved in programming, designing, and coordinating emergency management plans in active volcanic areas.
- Acquisition of necessary knowledge to plan the management and fruition of geological heritage in volcanic areas.

The educational path, which may be divided into curricula, aims first and foremost to consolidate basic knowledge regarding Volcanology, including statistical-mathematical applications, considering the diverse backgrounds of the enrolled students in terms of nationality and academic qualifications. Regarding Volcanology, particular attention is given to field survey methodologies, given that the University holding the course is located in an open-air laboratory represented by the Neapolitan volcanic area. The modeling of volcanic eruption dynamics is treated with the utmost accuracy. Concerning Geophysics, special focus is given to seismology and geophysical surveys in volcanic areas. A specific focus is reserved for fluid geochemistry, which, together with the analysis of seismic signals and those from the geodetic network, addresses the issue of monitoring in volcanic areas, drawing on the decades of experience of INGV-OV researchers in monitoring networks. To address more applied geological and geomorphological aspects, students are provided with the opportunity to tackle topics such as the typical instability of volcanic areas. As the culmination of the educational path, themes related to hazard estimation in active volcanic areas are addressed.

Finally, an internship is planned to be carried out at INGV-OV or other INGV sites dealing with Volcanology and/or Geophysics in volcanic areas, including observatories outside Italian territory. Through this internship, students learn fieldwork methodologies and personally confront the application of methods and techniques learned during their studies. The thesis, which must rigorously include an experimental data acquisition part, represents the culmination of the student's activity, and a significant portion of the second year of study is dedicated to it.

Art. 3

Professional profile and work opportunities

Source: SUA

Framework: A2.a - RAD

a- Professional figure

Geologist expert in Volcanology

b- Function in a work context and associated skills

The course is designed to provide Master's graduates in Volcanology with in-depth theoretical and experimental knowledge and skills regarding the physical and chemical processes governing volcano behaviour and their hazards. The educational path aims to offer students a quantitative background oriented towards the preparation of Master's graduates with particular aptitudes in the field of research in volcanology.

The functions that the intended professional figure will perform can be varied, reflecting the multiplicity of aspects of volcanological disciplines. Graduates will be called upon to study the past behaviour of active volcanoes to contribute to probabilistic hazard assessments, to monitor the current behaviour of these same volcanoes to surveil their physical state and predict activity evolution, to process series of geochemical and geophysical data to model the volcano system and assess its impact both locally and globally, and to operate in the proper dissemination of information regarding a volcano's state in pre-alert situations or ongoing crises.

During the course of their studies, Master's graduates acquire particular competencies in the multiple areas of modern volcanology, resulting in:

- Mastery of the scientific investigative method and in-depth scientific preparation in disciplines concerning volcanic systems, in their theoretical, experimental, and technical-applicative aspects.
- Operational capability for the acquisition, processing, and interpretation of quantitative field and/or laboratory data, both for research and applied purposes.
- Ability to develop physical-mathematical models of processes underlying modern volcanology, aimed at understanding the temporal evolution of volcanic systems, supporting the assessment of the impacts of such processes on the environment and society.
- Ability to develop geological mapping and to lead geological, geophysical, and geochemical survey campaigns, also through autonomous use of advanced techniques and tools for data collection, interpretation, representation, and spatial analysis. To this end, the use of appropriate and up-to-date methods such as Geographic Information Systems (GIS) and modern remote sensing systems will be privileged.
- Capacity for volcanic hazard analysis aimed at supporting the programming of prevention and emergency interventions for volcanic risk reduction both at the local level and for infrastructure and lifelines at a global scale.
- Analytical technical skills for the characterization of fluid emissions, minerals, and rocks.
- Ability to manage and analyze multiparametric big data describing the state of volcanoes.
- Ability to actively participate in multidisciplinary expert teams providing essential contributions to territorial planning in active volcanic areas and for volcanic risk management in general.

c- Possible employment fields

Graduates with a Master's degree in Volcanology will be able to carry out their functions and/or technical and professional activities in the following fields:

- Public and private research institutions, both Italian and foreign.
- Public and private organizations involved in operating in the field for environmental protection and management of risks related to natural events such as earthquakes and/or volcanic eruptions.
- Public and private organizations focused on reducing geological risks.
- Public or private institutions responsible for knowledge transfer in the field of Earth Sciences.
- Insurance and reinsurance companies dealing with insurance coverage and large episodic risks, but with significant economic implications (low-probability/high-impact events), such as volcanic events.
- Freelance geologists, subject to passing a state examination for registration with the geologists' register.

Art. 4

Admission requirements and knowledge required for access to the Degree Program¹ Source: SUA

Framework: A3.a - RAD

For admission to the Master's degree program in Volcanology, applicants must hold a bachelor's degree or a three-year university diploma, or another foreign qualification deemed suitable by the Course Council, or possess a three-year degree in the L-34 class. In particular, basic knowledge in

¹ Artt. 7, 13, 14 of the University Didactic Regulations.

the fields of geology, chemistry, physics, and mathematics is required. To access the master's degree program, graduates must have acquired at least 60 CFU (University Credits) from the following Scientific Disciplinary Sectors: GEO/01-GEO/12, FIS/01-FIS/08, MAT/01-MAT/09, CHIM/01-CHIM/04, CHIM/09, CHIM/12, ING-INF/05, INF/01.

Regarding personal preparation, for admission to the Master's degree program in Volcanology, a basic background in mathematical, physical, and chemical disciplines, as well as adequate basic geological knowledge, is required. The methods for assessing personal preparation should be referred to in the Course of Study's educational regulations.

Considering that the course is delivered entirely in English, proficiency in the English language equivalent to European level B2 or higher, duly certified, is required.

Art. 5

Procedures for access to the Degree Program (CdS)

Source: SUA

Framework: A3.b

- 1. The CCD of the Degree Program normally regulates the admission criteria and any scheduling of enrolments, except in cases subject to different provisions of law².
- 2. Verification of personal preparation is always mandatory, and only students who meet the curricular requirements can access it.

Source: SUA

Framework: A3.b

The verification of the student's personal preparation is carried out through an interview. A special committee, established within the Teaching Commission of the Course of Study, evaluates the congruence and suitability of the student's basic preparation intending to enroll. The Verification Committee consists of three professors, representing the various disciplinary fields of Earth Sciences, and is appointed annually by the Teaching Commission of the Course of Study.

Based on the student's curriculum vitae and the outcomes of the interview, the Committee issues a clearance for enrollment in the Master's degree program. The clearance includes the Committee's recommendations regarding the study plan, aimed at integrating the student's previous educational path and avoiding possible redundancies.

The schedule for the admission interview sessions is determined annually by the Department and is also published on the website. This schedule will include at least two sessions, corresponding to the beginning of classes and the deadline for enrollment set by the University.

Bachelor's degree graduates who have obtained a bachelor's degree in the L34 class (Geological Sciences) or in the class 16 ex D.M. 509/1999, with a score higher than 90/110, are exempt from the verification and obtaining clearance.

Students will be exempt from presenting the English language certificate if they meet at least one of the following conditions:

- Certified participation in at least one year of English language study at a secondary school;
- Possession of a qualification obtained at English language institutes recognized as equivalent to the Italian High School Diploma;
- Possession of a first-level degree (Bachelor equivalent) obtained from an Italian or foreign degree program delivered in English.

² National programmed access is regulated by L. 264/1999 and subsequent amendments and supplements.

Art. 6

Teaching activities and university training credit (Teaching activities and CFU)

Each training activity, prescribed by the CdS detail sheet, is measured in CFU. Each CFU corresponds to 25 hours of overall training commitment³ per student and includes the hours of teaching activities specified in the curriculum as well as the hours reserved for personal study or other individual training activities.

For the Degree Program covered by this Didactic Regulations, the hours of teaching specified in the curriculum for each CFU, established in relation to the type of training activity, are as follows ⁴:

- Lecture: 8 hours per CFU;
- Guided teaching exercises (in laboratory or in the classroom): 12 hours per CFU;
- Field activity: 16 hours per CFU;

For internship activities, each credit corresponds to 25 hours of overall training commitment⁵. The CFU corresponding to each training activity acquired by the student is awarded by satisfying the assessment procedures (examination, pass mark) indicated in the Course sheet relating to the course/activity attached to these Didactic Regulations.

Art. 7

Description of teaching methods

The didactic activity is carried out in conventional modality.

If necessary, the CCD decides which courses also include teaching activities offered online.

Some courses may also take place in seminar form and/or involve classroom exercises, language, and computer laboratories.

Detailed information on how each course is conducted can be found in the course sheets.

Art. 8

Testing of training activities⁶

1. The CCD, within the prescribed regulatory limits⁷, establishes the number of examinations and other means of assessment that determine the acquisition of credits. Examinations are individual

³ According to Art. 5, c. 1 of Italian Ministerial Decree No 270/2004, "25 hours of total commitment per student correspond to university training credits; a ministerial decree may justifiably determine variations above or below the aforementioned hours for individual classes, by a limit of 20 per cent".

⁴ The number of hours considers the instructions in Art. 6, c. 5 of the RDA: "of the total 25 hours, for each CFU, are reserved: a) 5 to 10 hours for lectures or guided teaching exercises; b) 5 to 10 hours for seminars; c) 8 to 12 hours for laboratory activities or fieldwork, except in the case of training activities with a high experimental or practical content, and subject to different legal provisions or different determinations by DD.MM.".

⁵ For Internship activities (Inter-ministerial Decree 142/1998), subject to further specific provisions, the number of working hours equal to 1 CFU may not be less than 25. [please indicate below in the note any different regulatory provisions, e.g., "LM-13: 1 CFU = 30 hours, Note MUR, Director Cuomo, Prot. 570/2011; LM-51, L-24: 1 CFU = 20 hours professional training activity + 5 hours of further supervised training activity, D.M. 654/2022 (Art. 2, practical-assessment Internship)"] ⁶ Article 22 of the University Didactic Regulations.

⁷ Pursuant to the DD.MM. 16.3.2007 in each Degree Programs the examinations or profit tests envisaged may not be more than 20 (Bachelor's Degrees; Art. 4. c. 2), 12 (Master's Degrees; Art. 4, c. 2), 30 (five-year single-cycle Degrees) or 36 (six-year single-cycle Degrees; Art. 4, c. 3). Pursuant to the RDA, Art. 13, c. 4, "the assessments that constitute an eligibility evaluation for activities referred to in Art. 10, c. 5, letters c), d), and e) of Ministerial Decree no. 270/2004, including the final examination for obtaining the degree, are excluded from the calculation." For Master's Degree Program and single-cycle Master's Degree Program, however, pursuant to the RDA, Art. 14, c. 7, "the assessments that constitute a progress evaluation for activities referred to in Art.10, c. 5, letters d) and e) of Ministerial Decree no.

and may consist of written, oral, practical, graphical tests, term papers, interviews, or a combination of these modes.

- 2. The examination procedures published in the course sheets and the examination schedule will be made known to students before the start of classes on the Department's website.⁸
- 3. Examinations are held subject to booking, which is made electronically. In case the student is unable to book an exam for reasons that the President of the Board considers justifiable, the student may still be admitted to the examination, following those students already booked.
- 4. Before examination, the President of the Board of Examiners verifies the identity of the student, who must present a valid photo ID.
- 5. Examinations are marked out of 30. Examinations involving an assessment out of 30 shall be passed with a minimum mark of 18; a mark of 30 may be accompanied by honours by a unanimous vote of the Board. Examinations are marked out of 30 or with a simple pass mark. Assessments following tests other than examinations are marked out with a simple pass mark.
- 6. Oral exams are open to the public. If written tests are scheduled, the candidate has the right to see his/her paper(s) after correction.
- 7. The University Didactic Regulations govern Examination Boards ⁹.

Art. 9

Degree Program structure and Study Plan

- 1. The legal duration of the Degree Program is 2 years
- 2. The student must acquire 120 CFU¹⁰, attributable to the following Types of Training Activities (TAF):
 - B) characterising,
 - C) related or complementary,
 - D) at the student's choice¹¹,
 - E) for the final exam,
 - F) further training activities.
- 3. The degree is awarded after having acquired 120 CFU by passing examinations, not exceeding 12, and the performance of other training activities.

Unless otherwise provided for in the legal framework of University studies, examinations taken as part of basic, characterising, and related or supplementary activities, as well as activities chosen autonomously by the student (TAF D) are taken into consideration for counting purposes. Examinations or assessments relating to activities independently chosen by the student may be

^{270/2004} are excluded from the exam count; the final examination for obtaining the Master's Degree and single-cycle Master's Degree is included in the maximum number of exams".

⁸ Reference is made to Art. 22, c. 8, of the University Teaching Regulations, which states that "the Department or School ensures that the dates for progress assessments are published on the portal with reasonable advance notice, which normally cannot be less than 60 days before the start of each academic period, and that an adequate period of time is provided for exam registration, which is generally mandatory."

⁹ Reference is made to Art. 22, paragraph 4 of the RDA according to which "Examination Boards and other assessments committees are appointed by the Director of the Department or by the President of the School when provided for in the School's Regulations. This function may be delegated to the CCD Coordinator. The Commissions comprise of the President and, if necessary, other professors or experts in the subject. In the case of active courses, the President is the course instructor, and in such cases, the Board can validly make decisions even in the presence of the President alone. In other cases, the President is a professor identified at the time of the Board's appointment. In the comprehensive evaluation of the overall performance at the conclusion of an integrated course, the professors in charge of the coordinated modules participate, and the President is appointed when the Commission is appointed."

¹⁰ The total number of CFU for the acquisition of the relevant degree must be understood as follows: six-year singlecycle Degree, 360 CFU; five-year single-cycle Degree, 300 CFU; Bachelor's Degree, 180 CFU; Master's Degree, 120 CFU. ¹¹ Corresponding to at least 12 ECTs for Bachelor's Degrees and at least 8 CFU for Master's Degrees (Art. 4, c. 3 of Ministerial Decree 16.3.2007).

taken into account in the overall calculation corresponding to one unit¹². Tests constituting an assessment of suitability for the activities referred to in Article 10, paragraph 5, letters, d) and e) of Ministerial Decree 270/2004¹³ are excluded from the count. Integrated Courses comprising of two or more modules are subject to a single examination.

- 3. In order to acquire the CFU relating to independent choice activities, the student is free to choose among all the Courses offered by the University, provided that they are consistent with the training project. This consistency is assessed by the Didactic Coordination Commission. Also, for the acquisition of the CFU relating to autonomous choice activities, the "passing the exam or other form of profit verification" is required (Art. 5, c. 4 of Ministerial Decree 270/2004).
- 4. The study plan summarises the structure of the Degree Program, listing the envisaged teachings broken down by course year and, in case, by curriculum. At the end, the propedeuticities envisaged by the Degree Program are listed. The study plan offered to students, with an indication of the scientific-disciplinary sectors and the area to which they belong, of the credits, of the type of educational activity, is set out in Annex 1 to these Didactic Regulations.
- 5. Pursuant to Art. 11, paragraph 4-bis, of Ministerial Decree 270/2004, it is possible to obtain the Degree according to an individual study plan that also includes educational activities different from those specified in the Didactic Regulations, as long as they are consistent with the CdS detail sheet of the academic year of enrollment. The individual study plan is approved by the CCD

Art. 10

Attendance requirements¹⁴

- 1. In general, attendance of lectures is a) strongly recommended but not compulsory. In the case of individual courses with compulsory attendance, this option is indicated in the relative teaching/activity course sheet available in Annex 2.
- 2. If the lecturer envisages a different syllabus modulation for attending and non-attending students, this is indicated in the individual Course details published on the CdS web page and on the teacher's UniNA website.
- 3. Attendance at seminar activities that award training credits is compulsory. The relative modalities for the attribution of CFU are the responsibility of the CCD.

Art. 11

Prerequisites and prior knowledge

1. The list of incoming and outgoing propedeuticities (necessary to sit a particular examination) can be found at the end of Annex 1 and in the teaching/activity course sheet (Annex 2).

¹² Pursuant to the D.M. 386/2007.

¹³ Art. 10, c. 5 of Ministerial Decree. 270/2004: "In addition to the qualifying training activities, as provided for in paragraphs 1, 2 and 3, Degree Programs shall provide for: a) training activities autonomously chosen by the student as long as they are consistent with the training project [TAF D]; b) training activities in one or more disciplinary fields related or complementary to the basic and characterising ones, also with regard to context cultures and interdisciplinary training [TAF C]; c) training activities related to the preparation of the final exam for the achievement of the degree and, with reference to the degree, to the verification of the knowledge of at least one foreign language in addition to Italian [TAF E]; d) training activities, not envisaged in the previous points, aimed at acquiring additional language knowledge, as well as computer and telematic skills, relational skills, or in any case useful for integration in the world of work, as well as training activities aimed at facilitating professional choices, through direct knowledge of the job sector to which the qualification may give access, including, in particular, training and guidance programs referred to in Decree no. 142 of 25 March 1998 of the Ministry of Labour [TAF F]; e) in the hypothesis referred to in Article 3, paragraph 5, training activities relating to internships and apprenticeships with companies, public administrations, public or private entities including those of the third sector, professional orders and colleges, on the basis of appropriate agreements".

2. Any prior knowledge deemed necessary is indicated in the individual Teaching Schedule published on the course webpage and on the teacher's UniNA website.

Art. 12

Degree Program Calendar

The Degree Program calendar can be found on the Department's website well before the start of the activities (Art. 21, c. 5 of the RDA).

Art. 13

Criteria for the recognition of credits earned in other Degree Programs in the same Class¹⁵

For students coming from Degree Programs of the same class, the Didactic Coordination Commission ensures the full recognition of CFU, when associated with activities that are culturally compatible with the training Degree Program, acquired by the student at the originating Degree Program, according to the criteria outlined in Article 14 below. Failure to recognise credits must be adequately justified. It is without prejudice to the fact that the number of credits relating to the same scientific-disciplinary sector directly recognised by the student may not be less than 50% of those previously achieved.

Article 14

Criteria for the recognition of credits acquired in Degree Programs of different classes, in university or university-level Degree Programs, through single courses, at online Universities and in international Degree Programs¹⁶; criteria for the recognition of credits acquired in extra-curricular activities

- With regard to the criteria for the recognition of CFU acquired in Degree Programs of different Classes, in university or university-level Degree Programs, through single courses, at online Universities and in International Degree Programs, the credits acquired are recognised by the CCD on the basis of the following criteria:
 - analysis of the activities carried out;
 - evaluation of the congruity of the disciplinary scientific sectors and of the contents of the training activities in which the student has earned credits with the specific training objectives of the Degree Program and of the individual training activities to be recognised.

Recognition is carried out up to the number of credits envisaged by the didactic system of the Degree Program. Failure to recognise credits must be adequately justified. Pursuant to Art. 5, c. 5-bis, of Ministerial Decree 270/2004, it is also possible to acquire CFU at other Italian universities on the basis of agreements established between the concerned institutions, in accordance with the regulations current at the time ¹⁷.

¹⁵ Art. 19 of the University Didactic Regulations.

¹⁶ Art. 19 of the University Didactic Regulations.

¹⁷ Art. 6, c. 9 of the University Didactic Regulations.

- 2. Any recognition of CFU relating to examinations passed as single courses may take place within the limit of 36 CFU, upon request of the interested party and following the approval of the CCD. Recognition may not contribute to the reduction of the legal duration of the Degree Program, as determined by Art. 8, c. 2 of Ministerial Decree 270/2004, except for students who enrol while already in possession of a degree of the same level¹⁸.
- 4. With regard to the criteria for the recognition of CFU acquired in extra-curricular activities, within the limit of 12 CFU the following activities may be recognised:
 - Professional knowledge, skills, and certified skills, taking into account the congruence of the activity carried out and/or of the certified skill with the aims and objectives of the Degree Program as well as the hourly commitment of the duration of the activity.
 - Knowledge and skills acquired in post-secondary-level training activities, which the University contributed to developing and implementing.

Art. 15

Criteria for enrolment in individual teaching courses

Enrolment in individual teaching courses, provided for by the University Didactic Regulations¹⁹, is governed by the "University Regulations for enrolment in individual teaching courses activated as part of the Degree Program"²⁰.

¹⁸ Art. 19, c. 4 of the University Didactic Regulations.

¹⁹ Art. 19, c. 4 of the University Didactic Regulations.

²⁰ R.D. No. 348/2021.

Article 16 Features and modalities for the final examination

Source: SUA

Framework: A5a (RAD)

The Final Examination for the attainment of the Master's degree in Volcanology consists of the candidate's oral defense of a written paper (Master's Thesis), under the supervision of one of the course professors. Researchers affiliated with INGV-OV may assist the supervisor by acting as co-supervisors. The topic of the Master's thesis must be related to one of the basic, defining, related, or integrative scientific-disciplinary sectors and be consistent with the educational objectives of the Master's degree. The thesis activity must rigorously include an experimental component, involving the collection of data (field and/or laboratory), produced in an original manner and independently elaborated by the student. The expected final paper will focus on a critical discussion of previous knowledge on the topic, the processing of the produced data, and will contain innovative insights on the subject matter. The final examination will allow for the assessment of the student's cultural maturity as well as their ability to process data, formulate scientific hypotheses, draw conclusions critically, and effectively communicate and synthesize the results of their work.

Framework: A5b (RAD)

The Master's degree in Volcanology is obtained upon passing a final examination, which consists of defending an original experimental thesis in written form. For admission to the examination, the student must have completed all the educational credits required by the course regulations, except those related to the examination itself. The educational activities related to the preparation of the final examination consist of the equivalent of 24 CFU (University Credits) of activities carried out within university structures and possibly at INGV-OV or other research centers, companies, or external organizations, according to the modalities established by the Course Council and under the guidance of a university supervisor and one or more co-supervisors. The final grade is expressed in one hundred tenths, with the possibility of awarding honors (cum laude).

Article 17

Guidelines for traineeship and internship

- Students enrolled in the Degree Program may decide to carry out internships or training periods with organisations or companies that have an agreement with the University. Traineeship and internship are compulsory and contribute to the award of credits for the other training activities chosen by the student and included in the study plan, as provided for by Art. 10, par. 5, letters d and e, of Ministerial Decree 270/2004²¹.
- 2. The CCD regulates the modalities and characteristics of traineeship and internship with specific regulations.
- 3. The University of Naples Federico II, through the Commission of Polytechnic and Basic Science School, ensures constant contact with the world of work to offer students and graduates of the University concrete opportunities for internships and work experience and to promote their professional integration.

²¹ Traineeships ex letter d can be both internal and external; traineeships ex letter e can only be external.

Article 18

Disqualification of student status²²

A student who has not taken any examinations for eight consecutive academic years incurs forfeiture unless his/her contract stipulates otherwise. In any case, forfeiture shall be notified to the student by certified e-mail or other suitable means attesting to its receipt.

Article 19

Teaching tasks, including supplementary teaching, guidance, and tutoring activities

- Professors and researchers carry out the teaching load assigned to them in accordance with the provisions of the RDA and the Regulations on the teaching and student service duties of professors and researchers and on the procedures for self-certification and verification of actual performance²³.
- 2. Professors and researchers must guarantee at least two hours of reception every 15 days (or by appointment in any case granted no longer than 15 days) and, in any case, guarantee availability by e-mail.
- 3. The tutoring service has the task of orienting and assisting students throughout their studies and of removing the obstacles that prevent them from adequately benefiting from attending courses, also through initiatives tailored to the needs and aptitudes of individuals.
- 4. The University ensures guidance, tutoring and assistance services and activities to welcome and support students. These activities are organised by the Schools and/or Departments under the coordination of the University, as established by the RDA in Article 8.

Article 20

Evaluation of the quality of the activities performed

- 1. The Didactic Coordination Commission implements all the quality assessment forms of teaching activities envisaged by the regulations in force according to the indications provided by the University Quality Presidium.
- 2. In order to guarantee the quality of teaching to the students and to identify the needs of the students and all stakeholders, the University of Naples Federico II uses the Quality Assurance (QA)²⁴ System, developed in accordance with the document "Self-evaluation, Evaluation and Accreditation of the Italian University System" of ANVUR, using:
 - surveys on the degree of placement of graduates into the world of work and on postgraduate needs;
 - data extracted from the administration of the questionnaire to assess student satisfaction for each course in the curriculum, with questions relating to the way the course is conducted, teaching materials, teaching aids, organisation, facilities.

The requirements deriving from the analysis of student satisfaction data, discussed, and analysed by the Teaching Coordination Committee and the Joint Teachers' and Students' Committee (CPDS), are included among the input data in the service design process and/or among the quality objectives.

²² Art. 24, c. 5 of the University Didactic Regulations.

²³ R.D No. 2482//2020.

²⁴ The Quality Assurance System, based on a process approach and adequately documented, is designed in such a way as to identify the needs of the students and all stakeholders, and then translate them into requirements that the training offer must meet.

3. The QA System developed by the University implements a process of continuous improvement of the objectives and of the appropriate tools to achieve them, ensuring that planning, monitoring, and self-assessment processes are activated in all the structures to allow the prompt detection of problems, their adequate investigation, and the design of possible solutions.

Article 21

Final Rules

The Department Council, on the proposal of the CCD, submits any proposals to amend and/or supplement these Rules for consideration by the Academic Senate.

Article 22

Publicity and Entry into Force

1. These Rules and Regulations shall enter into force on the day following their publication on the University's official notice board; they shall also be published on the University website. The same forms and methods of publicity shall be used for subsequent amendments and additions.

Annex 1 (CdS structure) and Annex 2 (Teaching/Activity course sheet) are integral parts of this Didactic Regulations. ANNEX 1.2

DEGREE PROGRAM DIDACTIC REGULATIONSVOLCANOLOGY

CLASS LM-74

School: Polytechnic and Basic Sciences School

Department: DiSTAR- Earth Science Sciences, Environment and Resource Department

Regulations in force since the academic year 2024-25

STUDY PLAN

Κεγ

Type of Educational Activity (TAF):

- **B** = Characterising
- **C** = Related or Supplementary
- **D** = At the student's choice
- **E** = Final examination and language knowledge
- **F** = Further training activities

Year I

Fr. Less. = Frontal lesson 1 CFU=18 hours

f.a. =. Field activity 1 CFU=12 hours

lab. = Laboratory activities 1 CFU=16 hours

Title Course	SSD	Module	CRE DITS	Hour s	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinar y area	Mandatory / optional
Physical Volcanology	GEO 08	single	9	108	4 Fr. Less + 1 lab. +4 f.a.	In-person	В	A1	Mandatory
Magmatology	GEO 07	single	6	48	6 Fr. Less	In-person	В	A1	Mandatory
Geochemistry of volcanic fluids	GEO 08	single	9	96	5 Fr. Less + 2 lab.+2 f.a.	In-person	В	A1	Mandatory
Volcano seismology and geodesy	GEO 10	single	6	52	5 Fr. Less + 1 lab	In-person	В	A4	Mandatory
Volcanotectonics	GEO 03	single	6	64	4 Fr. Less + 2 f.a.	In-person	В	A2	Mandatory
Statistics and mathematics for geosciences	GEO 10	single	6	60	3 Fr. Less + 3 lab	In-person	с	A4	Mandatory
Geophysical exploration of volcanic systems	GEO 11	single	6	52	5 Fr. Less. + 1 lab	In-person	В	A4	Mandatory
Slope stability in volcanic areas	GEO 05	single	6	60	4 Fr. Less. + 1 lab + 1 f.a.	In-person	D	A3	Mandatory (two of your
Volcanic landforms and landscapes	GEO 04	single	6	60	4 Lez. Fr. + 1 lab + 1 f.a.	In-person	D	A3	choices)

GIS and remote sensing in volcanic areas	GEO 05	single	6	60	3 Fr. Less + 3 lab	In-person	D	A3	
Experimental petrology	GEO 07	single	6	48	6 Fr. Less.	In-person	D	A1	
Geoarchaeology in volcanic areas	GEO 04	single	6	64	4 Fr. Less + 2 f.a.	In-person	D	A3	
Field volcanology	GEO 08	single	6	80	2 Fr. Less. + 4 f.a.	In-person	D	A1	

Year II									
Fr. Less. = Frontal lesson 1 CFU=18 hours									
f.a. =. Field activity	1 CF	U=12 hours	5						
lab. = Laboratory activiti	es 1 CF	U=16 hours	5						
Title Course	SSD	Modul e	CR EDI TS	Hours	Type Activities (lectures, workshops, etc.)	Course Modalities (in-person, by distance)	TAF	Disciplinar y area	Mandatory/ optional
Frontiers in multiparametric volcano monitoring	GEO 10	single	6	68	2 Fr. Less + 3 lab.+1 f.a.	In-person	В	А4	Mandatory
Volcano hazard and risk assessment	GEO 10	single	6	56	4 Fr. Less. + 2 lab	In-person	В	Α4	Mandatory
Physical modelling of volcano processes and dynamics	GEO 10	single	6	52	5 Fr. Less. + 1 lab	In-person	с	A4	Mandatory
Hydrogeology of volcanic areas	GEO 05	single	6	60	3 Fr. Less. + 3 lab	In-person	D	A3	Mandatory
Advanced isotope geochemistry	GEO 08	single	6	60	3 Lez Fr. Less. + 3 lab	In-person	D	A1	choices)
Internship			6	150			F		Mandatory

Other training activities/Italian language*		6				F/E	Mandatory
Prova finale		24				E	Mandatory
* For foreign students. The acquisition of the CFUs indicated in the Table under the label "Other Training Activities" will be decided by the CCD following an explicit request from the student, to be made within predetermined deadlines and accompanied by suitable certification. As for other training activities, in order to obtain their recognition in CFUs, it will be necessary to present a certification attesting to professional activity, issued by officially recognized public or private entities, as well as other entities, both public and							

private, engaged in fields relevant to the educational and professional objectives of the degree program.

List of List of propaedeuticities

No entry propaedeuticities

No exit propaedeuticities

ANNEX 2.1

DEGREE PROGRAM DIDACTIC REGULATIONS

VOLCANOLOGY

CLASS LM74

School: Polytechnical and Basic Science School

Department: DiSTAR – Earth Science, Environment and Resources Department

Didactic Regulations in force since the academic year 2024-2025

Course:	Teaching Langua	ge:
Physical Volcanology	English	
SSD (Subject Areas): GEO08		CREDITS: 9 (4 front. less. +1 lab.+4 f.a.)

Course year: 1°	Type of Educational Activity: Ch	aracterizing
Teaching Methods: in-person		

Contents extracted from the SSD declaratory consistent with the training objectives of the course:

Volcanology studies the eruptive activity and geology of volcanic areas both in relation to the origin and evolution of magmas, and in relation to the dynamics of ascent, eruption, transport and deposition of the products, using the methods of petrography, geochemistry, geology and geophysics. The expertise in the field, based on experimental and modelling approaches, as well as direct observation of the phenomena, are also essential in the understanding of geodynamic processes, in the quantification and mitigation of risks associated with volcanic activity, and in the retrieval and exploitation of geothermal energy. (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

The final goal of this course is to develop the students' ability of realizing a geological study in volcanic areas. The students should be able to carry out field and laboratory-based observation and analysis of volcanic successions and/or volcanic landforms, use scientific reasoning to interpret the results and deduce the deposition mechanism and eruptive process.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Written exam with either an obligatory or optional oral part. The written exam consisting of multiple choice, short answer essay and problem-solving questions and report on field activity.

Course:		Teaching Language:			
Magmatology		English			
SSD (Subject Areas): GEO07			CREDITS: 6 (6 front. less.)		
Course year: 1°	Type of Educati	ional Activity: Ch	aracterizing		

Teaching Methods: in-person

Contents extracted from the SSD declaratory consistent with the training objectives of the course:

Petrology studies structure, composition, origin and systematics of igneous, metamorphic and sedimentary rocks; petrogenetic and geodynamic significance of petrographic associations; thermodynamic interpretation and modelling of petrogenetic processes, including experimental studies, on the stability of mineral associations in rocks and magmas; petrochemical and petrophysical characterisation of rocks; petrogenetic-structural surveys and studies of igneous and metamorphic complexes (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

The final goal of this course is to develop the students' ability of understanding the main physical and chemical factors influencing magma behaviour during explosive and effusive eruptions. The student will be able to use analytical and experimental data in order to interpret pre- and syn- eruptive volcanic processes, and use these to define reasonable scenarios of volcanic hazard.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam

Course:		Teaching Langu	age:
Geochemisrty of volcanic fluids		English	
SSD (Subject Areas): GEO08			CREDITS: CREDITS: 9 (5 front. less. +2 lab.+2 f.a.)
Course year: 1°	Type of Educati	ional Activity: Ch	aracterizing
Teaching Methods: in-person			
Contents extracted from the SSD declaration	tory consistent v	vith the training	objectives of the course:

Geochemistry studies the genesis, distribution and behaviour of elements and nuclides in nature and their applications in the Earth Sciences, using the methods of chemistry and physical chemistry. The application of geochemical

approaches is crucial in planning the exploitation of strategic natural resources, including geothermal energy, in the control and quantification of soil, water and air pollution processes and in the mitigation of natural hazards. (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

The goal of this course is to introduce the students to the methods of the fluid geochemistry. To develop the students' skills to plain and define the strategies to investigate volcanic areas. Students should be able to carry out fluid sampling and measurements in the field, they should also learn laboratory instruments and analysis techniques.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam

Course:		Teaching Langu	age:
Volcano seismology and geodesy		English	
SSD (Subject Areas): GEO10			CREDITS: 6 (5 front. less.+1 lab)
Course year: 1°	Type of Educati	ional Activity: Ch	aracterizing
Teaching Methods: in-person			

Contents extracted from the SSD declaratory consistent with the training objectives of the course:

The fields of competence of the sector concern the structure of the Earth system and the rocks that make it up, in its deep and superficial parts, to define and interpret its dynamics, through the quantitative evaluation of the physical parameters that characterise it. The main objectives are: the quantitative modelling of the Earth, the study of the geodynamic processes that characterise its evolution, past and present, the study of geo-electromagnetic and gravitational fields, the assessment of natural hazards related to seismic and volcanic phenomena and their mitigation. Similarly, the relevant aspects of geodetic, topographic, remote sensing and thematic cartography are developed..... (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

This course will prepare students, including those with no seismology and geodesy background, to interpret seismic and geodetic signals from volcanoes. Students will be able to manage earthquake and geodetic source generation, measurements and the main instrumental topics (up-to date seismometers, up-to date geodetic instruments, arrays, borehole instruments...)

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam

Course:		Teaching Language:			
Volcanotectonics		English			
SSD (Subject Areas): GEO03	D (Subject Areas): GEO03				
Course year: 1°	Course year: 1° Type of Educational Activity:				
Teaching Methods: in-person					
Contents extracted from the SSD declara	tory consistent v	vith the training	objectives of the course:		
The sector is concerned with the study of	the processes of	the internal dyna	mics of the Earth and planets, the changes		
induced in surface and deep geological ur	nits, with the determined	ermination of the	boundary conditions of the relationships		
between stress fields and types of elastic a	and inelastic defo	ormation; the sur	vey and three-dimensional reconstruction		
by other fields of the Earth Sciences (all. B DM 30 Ottobre 2015 n. 855).					
Objectives:					
This course introduces the basic knowledge about mechanisms and deformation related to magma emplacement and transport, and about the deformation structures hosted in the volcanic rocks.					
Propaedeuticities: none					

Is a propaedeuticity for: no exam
Types of examinations and other tests:
Oral exam – report on field activity

Course:		Teaching Langu	age:
Geophysical exploration of volcanic s	ystems	English	
SSD (Subject Areas): GEO11			CREDITS: 6 (5 front. less. +1 lab.)
Course year: 1°	Type of Educati	onal Activity: Ch	aracterizing
Teaching Methods: in-person			
Contents extracted from the SSD declarat	ory consistent w	vith the training	objectives of the course:

The sector deals with measurement and data acquisition methodologies for the determination of geological structures and physical characteristics of the subsurface, both on land and on the seabed, and therefore also with the development of measurement instruments and methodologies for modelling, data processing and interpretation. Subsurface geophysical prospecting applies to the study of the earth's crust, the determination of seismic, volcanic, geological and hydrogeological hazards (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

The course aims at yielding adequate knowledge of the geophysical methods of investigation of the volcanic systems, of the theory and experiments of geophysical prospecting, as well as of data processing and interpretation techniques. The student will be prepared to tackle advanced studies critically and independently on the subject, as well as to develop simple feasibility projects for the geophysical survey, clearly formulating the scope, the hypotheses, the techniques, describing the various phases of the data processing and verifying the consistency and reliability of the interpretative results.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Oral exam

Course:		Teaching Langu	age:
Statistics and mathematics for geosciences		English	
SSD (Subject Areas): GEO10		1	CREDITS: 6 (3 front. less.+3 lab.)
Course year: 1°	Type of Educat	ional Activity: Re	lated or Supplementary
Teaching Methods: in-person	1		
Contents extracted from the SSD declara	tory consistent v	with the training	objectives of the course:
deep and superficial parts, in order to def physical parameters that characterise it. seismic and volcanic phenomena and methodologies and techniques for the a thermal and geo-electromagnetic data, us computer, statistical nature, with the spec 2015 n. 855).	fine and interpre The main objecti their mitigation. acquisition, analy sing and developi cific slant and for	it its dynamics, the ves are:, the The above-men ysis and interpre ng quantitative n the purposes of	rough the quantitative assessment of the assessment of natural hazards related to ntioned objectives are pursued through etation of gravimetric, magnetic, seismic, nethodologies of a physical, mathematical, the Earth Sciences (all. B DM 30 Ottobre
Objectives: The final goal of this course is to equip the second secon	he students with odeling, and ha:	a solid backgro zard analysis.	und in statistics and mathematics, which
Propaedeuticities: none		, 	
Is a propaedeuticity for: no exam			
Types of examinations and other tests:			
Oral exam – laboratory reports			

Course:		Teaching Langu	age:
Experimental petrology		English	
SSD (Subject Areas): GEO07		I	CREDITS: 6 (6 front. less.)
	1		
Course year: 1°	Type of Educat	ional Activity: at	the student's choice
Teaching Methods: in-person			
Contents extracted from the SSD declaration	tory consistent v	vith the training	objectives of the course:
The sector deals with structure, compositi petrogenetic and geodynamic significance of petrogenetic processes, including exp magmas; petrochemical and petrophysica igneous and metamorphic complexes (all.	on, origin and sy of petrographic perimental studi al characterisatic B DM 30 Ottobr	stematics of igne associations; the es, on the stabil on of rocks; petro e 2015 n. 855).	ous, metamorphic and sedimentary rocks; rmodynamic interpretation and modelling lity of mineral associations in rocks and ogenetic-structural surveys and studies of
Objectives:			
The final goal of this course is to develo of experimental petrology aimed at inter of magmas and with magma ascent to th	p the student's rpreting natural ne surface durin	ability into unde phenomena rela g volcanic erupti	erstanding the fundamental knowledges ated with the genesis and differentiation ions.
Propaedeuticities: none			
Is a propaedeuticity for: no exam			
Types of examinations and other tests:			
Oral exam			

Course:	Teaching Language:
Slope stability in volcanic ares	English

SSD (Subject Areas): GEO05		CREDITS: 6 (4 front. less. + 1 lab + 1 f.a.)
Course year: 1°	Type of Educational Activity: at	the student's choice
Teaching Methods: in-person	1	
Contents extracted from the SSD declara The competences of this sector includ deformations, subsidence and geopedolo slope stability; geological exploration o planning. (all. B DM 30 Ottobre 2015 n. 8	tory consistent with the training de: soil protection, with a focu ogy; technical characterisation of l f the subsurface and thematic of 55).	objectives of the course: Is on landslides, deep gravitative slope loose and welded rocks, also in relation to cartography, aimed at urban and spatial
Objectives: The objective of the course is to provid ii) methods for analyzing slope stability landslide susceptibility and risk and re areas. Conversely from a traditional slo basis of their consistence with the geom	e knowledge about i) slope stab , iii) methods for predicting land emediation measures for unsta ope stability course, contents an norphologic environment of volo	vility conditions and landslide processes, slides runout, iv) methods for estimating ble slopes of volcanic and peri-volcanic and case histories will be selected on the canic and peri-volcanic areas.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam, which includes recognition/interpretation of a landslide through a photo.

Course:	Teaching Langu	age:
Geoarchaeology in volcanic areas	English	
SSD (Subject Areas): GEO04		CREDITS: 6 (4 front. less.+ 2 f.a.)

Course year: 1°	Type of Educational Activity: at the student's choice
Course year: 1°	Type of Educational Activity: at the student's choice

Teaching Methods: in-person

Contents extracted from the SSD declaratory consistent with the training objectives of the course:

The sector deals with the study of the 'environmental system' through the analysis of the elements and physical processes connected with the exogenous dynamics of the geosphere; with the experimental and theoretical study of the forms of the earth's surface on the basis of analysis methods and techniques, such as photo-interpretation, remote sensing and geomorphological surveys and processing also with the use of models; the development of cartographic methods and techniques, also with the use of territorial information systems, for the representation of data and their processing with particular attention to exogenous processes, geomorphological assets and environmental problems (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

Reconstruction of ancient buried landscapes and their anthropogenic features by using a multidisciplinary approach including earth and environmental sciences as well as archaeological and historical sources.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam

Course:		Teaching Langu	age:
Volcanic landforms and landscapes		English	
SSD (Subject Areas): GEO04			CREDITS: 6 (4 front. less + 1 lab. + 1 f.a.)
Course year: 1°	Type of Educati	onal Activity: at	the student's choice

Teaching Methods: in-person

Contents extracted from the SSD declaratory consistent with the training objectives of the course:

The sector deals with the study of the 'environmental system' through the analysis of the elements and physical processes connected with the exogenous dynamics of the geosphere; with the experimental and theoretical study of the forms of the earth's surface on the basis of analysis methods and techniques, such as photo-interpretation, remote sensing and geomorphological surveys and processing also with the use of models; the development of cartographic methods and techniques, also with the use of territorial information systems, for the representation of data and their processing with particular attention to exogenous processes, geomorphological assets and environmental problems (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

To recognise the main volcanic forms and characterize them by morphometric analysis; assessing hazard and erosion rates related to drainage systems

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Oral exam

Course:		Teaching Language:	
GIS and remote sensing in volcanic areas		English	
SSD (Subject Areas): GEO05			CREDITS: 6 (3 front. less. + 3 lab.)
Course year: 1°	Type of Educati	ional Activity: at	the student's choice
Teaching Methods: in-person			
Contents extracted from the SSD declarat	tory consistent v	vith the training	objectives of the course:

The competences of this sector include: hydrogeology, with reference to the research of aquifers in the various geological contexts, the study of underground water circulation, the assessment of the vulnerability of aquifers, their

management and defence against pollution; and thematic mapping, aimed at urban and territorial planning, including environmental impact and hydrogeological risk assessment (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

The use of Geographical Information Systems (GIS), along with the integrated use of remote sensing monitoring techniques, will make it possible to acquire a wider knowledge of ground surface deformations in volcanic and peri-volcanic areas, with special emphasis on slope movements/gravitational and erosional phenomena.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Written/oral exam - laboratory reports

Course:		Teaching Langu	age:
Field Volcanology		English	
SSD (Subject Areas): GEO08			CREDITS: 6 (2 front. less. + 4 f.a.)
Course year: 1°	Type of Educati	ional Activity: at	the student's choice
Teaching Methods: in-person			
Contents extracted from the SSD declara	tory consistent v	vith the training	objectives of the course:
Volcanology studies the eruptive activity a	and geology of vo	olcanic areas botl	h in relation to the origin and evolution of

Volcanology studies the eruptive activity and geology of volcanic areas both in relation to the origin and evolution of magmas, and in relation to the dynamics of ascent, eruption, transport and deposition of the products, using the methods of petrography, geochemistry, geology and geophysics. The expertise in the field, based on experimental and modelling approaches, as well as direct observation of the phenomena, are also essential in the understanding of geodynamic processes, in the quantification and mitigation of risks associated with volcanic activity, and in the retrieval and exploitation of geothermal energy. (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

Field studies in volcanology concentrating on physical aspects of volcanic processes. This course provides the student with comprehensive training that covers several aspects of volcanic geology. Our training focuses on

developing the skills and knowledge that will enable the student to carry out his/her own volcanological fieldwork on active volcanic systems. By the end of this Course, students will have knowledge of the basic principles of volcanism. They will be able to explain the mechanism of various types of volcanic eruptions, interpret volcanic deposits and their stratigraphic successions.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests:

Written exam with either an obligatory or optional oral part. The written exam consisting of multiple choice, short answer essay and problem-solving questions and report on field activity.

Course:		Teaching Langu	age:
Frontiers in multi-parametric volcand	o monitoring	English	
SSD (Subject Areas): GEO10			CREDITS: 6 (2 front. less.+1 f.a. + 3 lab.)
Course year: 2°	Type of Educat	ional Activity: Ch	aracterizing
Teaching Methods: in-person			
Contents extracted from the SSD declarat	tory consistent v	vith the training	objectives of the course:

The fields of competence of the sector concern the structure of the Earth system and the rocks that make it up, in its deep and superficial parts, to define and interpret its dynamics, through the quantitative evaluation of the physical parameters that characterise it. The main objectives are: the quantitative modelling of the Earth, the study of the geodynamic processes that characterise its evolution, past and present, the study of geo-electromagnetic and gravitational fields, the assessment of natural hazards related to seismic and volcanic phenomena and their mitigation. (all. B DM 30 Ottobre 2015 n. 855).

Objectives:

Gain knowledge about how to design a volcano monitoring network and use monitoring data to detect changes in the volcano dynamic jointly from different physical parameters.

Propaedeuticities: none

Is a propaedeuticity for: no exam
Types of examinations and other tests:
Oral exam

Course: T		Teaching Language:		
Volcano hazard and risk assessment		English		
SSD (Subject Areas): GEO10		I	CREDITS: 6 (4 front. less.+ 2 lab.)	
Course year: 2°	se year: 2° Type of Educational Activity: Characterizing		aracterizing	
Teaching Methods: in-person	I			
Contents extracted from the SSD declara	tory consistent v	vith the training	objectives of the course:	
The fields of competence of the sector co	ncern the structu	ire of the Earth s	ystem and the rocks that make it up, in its	
deep and superficial parts, to define and parameters that characterise it. The main	interpret its dyn objectives are:	amics, through t the assessmen	he quantitative evaluation of the physical t of natural hazards related to seismic and	
volcanic phenomena and their mitigation.	(all. B DM 30 Ot	tobre 2015 n. 85	5).	
Objectives:				
The goal of this course is to introduce	the students to	the principles	of fluid-dynamics and review the basic	
physics necessary for understanding the physical models adopted in volcanology. The students will acquire the ability to use existing software and develop new simple models of magma transport and emplacement.				
Propaedeuticities: none				
Is a propaedeuticity for: no exam				
Types of examinations and other tests:				
Written exam				

Course:	Course:		Teaching Language:		
Physical modelling of volcano processes and dynamics		English			
SSD (Subject Areas): GEO10			CREDITS: 6 (5 front. less.+1 lab.)		
Course year: 2°	r: 2° Type of Educational Activity: Related or Supplementary		lated or Supplementary		
Teaching Methods: in-person					
Contents extracted from the SSD declara	tory consistent v	with the training	objectives of the course:		
The fields of competence of the sector concern the structure of the Earth system and the rocks that make it up, in its deep and superficial parts, to define and interpret its dynamics, through the quantitative evaluation of the physical parameters that characterise it. The main objectives are: the quantitative modelling of the Earth, the study of the geodynamic processes that characterise its evolution, both past and present, the study of geo-electromagnetic and gravitational fields, the assessment of natural hazards related to seismic and volcanic phenomena and their mitigation. (all. B DM 30 Ottobre 2015 n. 855).					
Objectives:					
The goal of this course is to introduce the students to the principles of fluid-dynamics and review the basic physics necessary for understanding the physical models adopted in volcanology. The students will acquire the ability to use existing software and develop new simple models of magma transport and emplacement.					
Propaedeuticities: none					
Is a propaedeuticity for: no exam					
Types of examinations and other tests:					
Written exam and colloquium					

Course:	Teaching Language:

Advanced isotope geochemistry		English		
SSD (Subject Areas): GEO08			CREDITS: 6 (3 front. less. + 3 lab.)	
Course year: 2°	Type of Educational Activity: at the student's choice		the student's choice	
Teaching Methods: in-person				
Contents extracted from the SSD declaration	tory consistent w	vith the training	objectives of the course:	
Geochemistry studies the genesis, distribution and behaviour of elements and nuclides in nature and their applications in the Earth Sciences, using the methods of chemistry and physical chemistry. Using the same methods, Volcanology studies eruptive dynamics and its relationship with processes of magmatic origin and evolution from both an experimental and modelling perspective The application of geochemical and volcanological approaches is crucial in planning the exploitation of strategic natural resources, including geothermal energy, and in the mitigation of natural hazards. (all. B DM 30 Ottobre 2015 n. 855).				
Objectives:				
The main goal of this course is to provide the students with a solid background in isotope geochemistry applied to volcanology and petrology, including a laboratory experience aimed at producing and interpreting isotope data.				
Propaedeuticities: none				
Is a propaedeuticity for: no exam				
Types of examinations and other tests:				
Written exam with either an obligatory short answer essay and problem-solving	y or optional ora g questions and t	ıl part. The writ report on field a	tten exam consisting of multiple choice, activity.	

Course:	Teaching Language:		
Hydrogeology of volcanic areas	English		
SSD (Subject Areas): GEO05		CREDITS: 6 (3 front. less. + 3 lab.)	

Course year: 2°	Type of Educational Activity: at the student's choice		
Teaching Methods: in-person			
Contents extracted from the SSD declarat	tory consistent with the training	objectives of the course:	
The competences of this sector include: hydrogeology, with reference to the research of aquifers in the various geological contexts, the study of underground water circulation, the assessment of the vulnerability of aquifers, their management and defence against pollution; and thematic mapping, aimed at urban and territorial planning, including environmental impact and hydrogeological risk assessment (all. B DM 30 Ottobre 2015 n. 855).			
Objectives:			
The course will provide appropriately selected hydrogeological methods for the characterization, monitoring, management and surveillance of volcanic areas, as well as use of volcanic aquifers as low enthalpy geothermal and thermo-mineral resources.			
Propaedeuticities: none			
Is a propaedeuticity for: no exam			
Types of examinations and other tests:			
oral exam on course topics and discussion	on of a project report (PowerPo	int presentation).	

ANNEX 2.2

DEGREE PROGRAM DIDACTIC REGULATIONS

VOLCANOLOGY

CLASS LM-74

School: Polytechnic and Basic Science School

Department: DiSTAR - Earth Sciences, Environment and Resources Department

Didactic Regulations in force since the academic year 2024-2025

Training Activity: Training Activity Language:					
Internship English					
Other ti	raining activities/Italian language				
Content of the activities consistent with the training objectives of the			CFU:		
			1. 6 CF	U	
1.	1. Internship		2. 6 CFU		
2. Other training activities/Italian language					
Course	year:			Type of Training Activity:	
1.	2 nd year			1. F	
2. 2 nd year			2. F/E		
Teachin	ng Methods:				

In person

Objectives:

- The internship 1. is intended to take place at either the INGV-OV or other INGV offices specializing in volcanology and/or geophysics in volcanic regions, as well as at observatories outside Italy. Through this internship, students gain hands-on experience with fieldwork methodologies and directly engage in applying the methods and techniques learned during their course of study.
- For foreign students 2. it is intended a course via CLA in the first semester of the second year to gain the mandatory basic knowledge of Italian language.
- For Italian students, the acquisition of the CFUs indicated under the label 2. "Other Training Activities" will
 be decided by the CCD following an explicit request from the student, to be made within predetermined
 deadlines and accompanied by suitable certification. As for other training activities, in order to obtain their
 recognition in CFUs, it will be necessary to present a certification attesting to professional activity, issued by
 officially recognized public or private entities, as well as other entities, both public and private, engaged in
 fields relevant to the educational and professional objectives of the degree program.

Propaedeuticities: none

Is a propaedeuticity for: no exam

Types of examinations and other tests: at the completion of the internship, the student will prepare a final report and send it to the CCD

2.