UNIVERSITÀ DEGLI STUDI FIRENZE

Scuola di Ingegneria

School of Engineering, University of Firenze

CL *M*agistrale / **S**econd **C**ycle Degree

a. y. 2017/2018

GEM Geoengineering

Classe di Laurea Magistrale

Master of Science Class

LM-35 Ingegneria per l'Ambiente e il Territorio

School of ENGINEERING

Department of Civil and Environmental Engineering - DICEA

http://www.ing-gem.unifi.it

UNESCO Chair - Prevention and sustainable management of GEO-HYDROLOGICAL HAZARDS

UNIVERSITÀ DEGLI STUDI FIRENZE

DICEA
DIPARTIMENTO DI INGEGNERIA CIVILE E AMBIENTALE

DST
DIPARTIMENTO DI SCIENZE DELLA TERRA

To promote the development of innovative technologies for the prevention and mitigation of Geo-hydrological hazards.

To promote research at international level by offering scientific facilities to post-graduated Students and visiting researchers.

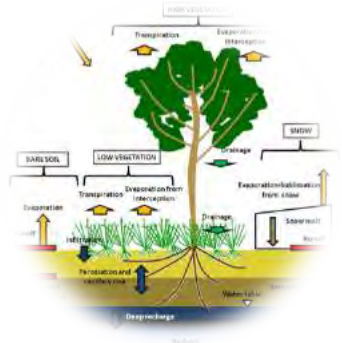
To develop tools and procedures for supporting risk reduction policies and emergency management for the safety of the human life;

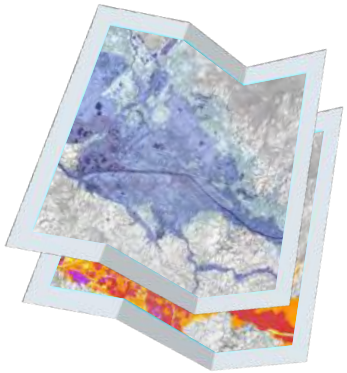
To promote the protection of cultural heritage threatened by geo-hydrological hazards;.

UNIVERSITÀ DEGLI STUDI FIRENZE | School of Engineering

Second Cycle Degree in GEOENGINEERING

http://www.ing-gem.unifi.it





The master degree in **Geoengineering** is an **international** and **interdisciplinary** master devoted to train **specialist technicians/practitioners** in the activities of ***monitoring, design and management of systems and structures*** for **geohydrological risk reduction** with particular reference to **floods, landslides, subsidence, sinkhole** and in general … to slope and basin scale dynamics.

What You Will Do

With a degree in Geoengineering you will be a **top-skills expert** in the **prevention**, **mitigation** and **management** of **geo-hydrological hazards and risks**.

Due to the **interdisciplinary and international character of the study course**, the Geoengineer graduated in Firenze will be attractive in both ***enterprises*** and ***public agencies*** operating across a **wide range of engineering fields**, from **hydraulics** to **geotechnics** and **applied geology**.

The **Programme** is implemented through a **two-year study plan** that foresees the acquisition of a number of **ECTS** in accordance with the learning objects in different sectors, i.e. *structural mechanics*, *geotechnics*, *hydrology* and *hydraulics*, *geology and engineering geology* as well as in *numerical methods*, *statistics* and *geomatics* are all integrated.

The study plan is organized with focus on the interdisciplinarity:

- ✓ The **60 ECTS** of the I year are organized in disciplines, strongly characterized by interdisciplinarity: *Computational methods*, *Fluvial hydraulics*, *Structural mechanics and engineering*, *Geology*, *Engineering Geology*, *Engineering Geomorphology*;
- ✓ The **33 ECTS** of the disciplines of the II year are dedicated to: *Earthquake geotechnical engineering*, *Slope Stability*, *Watershed hydrology*, *Geomatics*, *Watershed management* or *Soil conservation:*
- ✓ **27 ECTS** are individual/personal educational activities:
  - ***Elective courses*** as free choice of the student within the **learning objects** of the degree course;
  - **Final examination** and **traineeship**

STUDY PLAN FIRST YEAR (60 ECTS*)

Year	I Semester		II Semester	
	Teaching Course	ECTS	Teaching Course	ECTS
I	Numerical Methods for Scientific Computing/Statistical Data Analysis (joint courses)			12
	Structural Mechanics and Engineering I/ Structural Mechanics and Engineering II (joint courses)			12
	Geology I/Geology II (joint courses)			12
	Fluvial Hydraulics	9	Engineering Geology	9
			Engineering Geomorphology	6

STUDY PLAN SECOND YEAR (60 ECTS*)

Year	I Semester		II Semester	
	Teaching Course	ECTS	Teaching Course	ECTS
II	Earthquake Geotechnical Engineering	6	*Elective course, one among:* Watershed Management Soil Conservation	6
	Slope Stability	6	*Elective course, free choice*	9
	Watershed Hydrology	9	Final Examination	18
	Geomatics	6		

* ECTS - European Credit Transfer System, comparable to the Italian CFU - Crediti Formativi Universitari

To be admitted to the Second Cycle (Master) **Degree** programmes, a first cycle or a single cycle degree awarded by an Italian or a foreign University is required.

In addition, applying students have to meet the **general educational requirements** and possess an **adequate personal education background.**

General educational requirements:

36 ECTS in **Basic Compulsory Subjects**, among which **18 ECTS** in the disciplines "Mathematics, Informatics and Statistics".

45 ECTS in **Compulsory Subjects**, Characteristic of the Class, among which **30 ECTS** in disciplines of "Civil Engineering" and "Environmental Engineering".

Personal education background

The **weighted average on the exams** must be equal or greater than 22/30

A knowledge in **English Language B2 Level** is required.

Master Programme

http://www.ing-gem.unifi.it

Geoengineering

Coordinator

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Educational Office of School of Engineering (Segreteria Didattica)

- Support to the organization and functioning of Official bodies for of the Degree Courses
- Assistance to Quality Assurance of the degree courses
- Management of Applications for assessment of students applying for second cycle degrees

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