

SCIENCES, TECHNOLOGIES AND HEALTH

Geomechanics, civil engineering and risks 2nd year

Master in Civil engineering



Target level
Baccalaureate
+5



ECTS
120 credits



Duration
1 year



Component
UFR PhITEM
(physique,
ingénierie, terre,
environnement,
mécanique)



Language(s) of instruction
English

Presentation

The international GCER program, co-accredited with G-INP, is based on:

- The international 1st year, which is entirely common to the two specialisations Civil engineering and Mechanics and leads to three international programs, including GCER
- At master 2nd level, three specialised courses worth 3 ECTS are common to the HCE program and the ENSE3, one module worth 3 ECTS is common to the HCE, and one specialised course is shared with the STE specialisation. More than 80% of the courses in this program at 2nd years level are part of the Earthquake engineering program of the Erasmus Mundus MEEES (Master in Earthquake engineering and engineering seismology)

The Geomechanics, civil engineering and risks (GCER) program is an international course primarily intended for students wishing to focus on research (PhD thesis) in the field of geomechanics and civil engineering in France or abroad, with a view to pursuing a career as teacher-researcher in a University, researcher in a large public organisation (CNRS etc) or R&D engineer within a company.

This Master Course gives you the opportunity to apply to the UGA Graduate School and one of its 15 thematic programs. The Graduate School@UGA is a new training programme

through and for research which was launched in 2021 within the Université Grenoble Alpes, and which concerns all the schools and components of the UGA.

The objective of these thematic programs is to offer interested students an interdisciplinary training program and academic excellence combining university studies and laboratory internships. Each thematic program develops a specific line of research, allowing then to embark on a PhD, or to have a direct professional insertion.

The program regroups students registered in different mentions, master programs or engineer school tracks and working together in specific courses

Participation in the Graduate School@UGA is for two years (M1 and M2) and may open the possibility of obtaining an academic scholarship for two years for the best international students (non-French baccalaureate holders).

For more information : <https://www.univ-grenoble-alpes.fr/education/graduate-school/>

International education : Internationally-oriented programmes

International dimension

Study abroad as an exchange student

As part of this track, you have the opportunity to study for a semester or a year at a UGA partner University abroad.

The International Relations Officers of your faculty will be able to provide you with more information.

More information on : <https://international.univ-grenoble-alpes.fr/partir-a-l-international/partir-etudier-a-l-etranger-dans-le-cadre-d-un-programme-d-echanges> /

Admission

Access conditions

The first year of master's degree is accessible on file (and / or interview) to candidates with a national diploma conferring the degree of license in a field compatible with that of the master or via a validation of studies or acquired according to the conditions determined by the university or training. The second year is accessible on file (and / or interview) to candidates who have validated the 1st year of a compatible course or through a validation of studies or acquired under the conditions determined by the university or training

Public continuing education : You are in charge of continuing education :

- if you resume your studies after 2 years of interruption of studies
- or if you followed a formation under the regime formation continues one of the 2 preceding years
- or if you are an employee, job seeker, self-employed. If you do not have the diploma required to integrate the training, [you can undertake a validation of personal and professional achievements \(VAPP\)](#)

Candidature / Application

You want to apply and sign up for a master ? Please be aware that the procedure differs depending on the diploma you want to take, the diploma you have already obtained and, for foreign students, your place of residence

Let us be your guide – simply follow this [link](#)

Fees

Tuition fees 2023-2024 : 243 € + 100€ CVEC

Useful info

Contacts

Program director

Gioacchino Viggiani

✉ Gioacchino.Viggiani@univ-grenoble-alpes.fr

Program director

Stefano DAL PONT, responsable Mention

✉ stefano.dalpont@3sr-grenoble.fr

Program administration

Registrar's Office for the Master in Civil Engineering

✉ phitem.master.gc@univ-grenoble-alpes.fr

Program administration

Application

✉ phitem.candidature.etudiant@univ-grenoble-alpes.fr

Course location(s) - City

📍 Grenoble

Campus

🏠 Grenoble - University campus

Program

Master 2nd year

Semester 9

	Nature	CM	TD	TP	Crédits
UE Selected topic in continuum mechanics	Teaching Unit (UE)	30h			6 credits
UE Numerical methods for nonlinear mechanics	Teaching Unit (UE)	36h	10h		6 credits
UE english or FLE or others	Teaching Unit (UE)				3 credits
UE Experimental Methods in Geomechanics	Teaching Unit (UE)	30h		12h	6 credits
UE Basic geomechanics	Teaching Unit (UE)	20h			3 credits
UE Basic engineering seismology	Teaching Unit (UE)	20h			3 credits
UE Mechanics of damage and rupture	Teaching Unit (UE)	20h			3 credits
UE Behavior of geotechnical structures	Teaching Unit (UE)	20h			3 credits
UE Durability and vulnerability of structures and associated risks	Teaching Unit (UE)	20h			3 credits
UE Advanced soil mechanics	Teaching Unit (UE)	20h			3 credits
UE Advanced rock mechanics	Teaching Unit (UE)	18h			3 credits
UE Strain localization in geomaterials	Teaching Unit (UE)	20h			3 credits
UE Mechanics of porous media	Teaching Unit (UE)	22h			3 credits
UE Dynamics of structures	Teaching Unit (UE)	26h			3 credits
UE Geomechanics in reservoir and basin systems	Teaching Unit (UE)	20h			3 credits

UE Soil dynamics and nonlinear site response analysis	Teaching Unit (UE)	21h		3 credits
UE Quantitative Image Analysis for Mechanics	Teaching Unit (UE)	10h	10h	3 credits
UE Plastic analysis of structures	Teaching Unit (UE)			3 credits

Semester 10

	Nature	CM	TD	TP	Crédits
UE Research Project	Teaching Unit (UE)				30 credits