

Third GEM-EGU Summer School on GeoHazards Risk Assessment

University of Aveiro, Portugal
7-11 of September 2026



What is it?

This summer school offers comprehensive training in earthquake impact assessment through a multi-hazard approach, covering ground shaking, liquefaction, landslides, and tsunamis.

Participants will learn how to perform earthquake scenarios using the OpenQuake-engine, drawing on recent events such as the 2023 Türkiye earthquake and the 2025 Myanmar earthquake. This year's programme also includes sessions on AI for exposure and vulnerability modelling, and on augmented and virtual reality for risk communication.

Participants will also have the opportunity to obtain an official OpenQuake-engine (Scenarios) certification.

OK interesting, who will teach?

- **Vitor Silva** (University of Aveiro, GEM Foundation)
- **Finn Løvholt** (Norwegian Geotechnical Institute)
- **Catalina Yepes** (GEM Foundation)
- **Catarina Costa** (GEM Foundation)
- **Lana Todorovic** (GEM Foundation)
- **Christopher Brooks** (GEM Foundation)
- **Karim Aljawhari** (GEM Foundation)
- **Daniel Gomez** (GEM Foundation)
- **Marzia Santini** (EU JRC)
- **Hugo Rodrigues** (University of Aveiro)
- **Daniel Emilio** (University of Aveiro)

And out of curiosity, who is supporting this event?

This summer school is organised as part of a joint effort with the University of Aveiro, the Global Earthquake Model (GEM) Foundation, and the European Geosciences Union (EGU), with support from European Facilities for Earthquake Hazard and Risk (EFEHR).

At the end of the school, what will I be able to do?

Participants will learn how to perform hazard and risk analysis using:

- open-source tools, in particular the OpenQuake engine developed by the GEM Foundation, and
- open models and datasets covering the District of Lisbon (Portugal), or datasets from their own regions.

They will be able to:

- model earthquake scenarios using OpenQuake,
- work with open data, models, and tools for hazard and risk analysis,
- understand the main components required for multi-hazard risk assessment,
- explore the use of AI for exposure and vulnerability modelling,
- understand how AR and VR can support risk communication,
- present complex risk results to different stakeholders.

Great, but how much does it cost?

The course costs EUR 400 which includes accommodation, coffee breaks, lunches, social dinner, and training material. The students are expected to cover their travel costs. Fee waivers and travel fellowships (up to EUR 1000) can be requested for applicants from lower or lower-middle income countries.

Count me in, how do I register?

Due to the limited number of places (20), admission to the summer school is a two-step process. Please fill in this [form](#) indicating why you would like to attend the summer school, and how you plan to apply this knowledge, tools, and models in the future. Selected candidates will be informed and asked to finalize the registration process.

For additional information, please contact the coordinator of the Summer School at vitor.s@ua.pt.



THIRD GEM-EGU SUMMER SCHOOL ON GEOHAZARDS RISK ASSESSMENT

7-11 OF SEPTEMBER 2026, AVEIRO PORTUGAL

MONDAY

09:00 - 09:30
09:30 - 10:00
10:00 - 10:30
11:00 - 11:30
11:30 - 13:00
13:00 - 14:30
14:30 - 15:30
15:30 - 17:30

Opening of the Summer School (Vitor Silva, Helen Crowley)
Welcome participants, Creation of work groups (Vitor Silva)
Presentation of the Global Earthquake Model (Vitor Silva)
Coffee Break
Risk reduction activities from the City Hall of Lisbon (Claudia Pinto)
Lunch
Concepts about ground shaking scenarios (Christopher Brooks)
Running earthquake scenarios in OpenQuake (Christopher Brooks)

TUESDAY

09:00 - 09:45
09:45 - 11:00
11:00 - 11:30
11:30 - 12:15
12:15 - 13:00
13:00 - 14:30
14:30 - 15:15
15:15 - 16:00
16:00 - 18:00

Introduction to liquefaction
Running liquefaction assessment in OpenQuake (Lana Todorovic)
Coffee Break
Introduction to landslides
Running landslide assessment in OpenQuake (Lana Todorovic)
Lunch
Introduction to tsunamis (Finn Løvholt)
Earthquake Scenarios in OpenQuake - Group work
Visit Costa Nova and Barra

WEDNESDAY

09:00 - 09:30
09:30 - 10:00
10:00 - 11:00
11:00 - 11:30
11:30 - 13:00
13:00 - 14:30
14:30 - 17:30

Exposure modelling for Loss Assessment (Vitor Silva)
Artificial Intelligence in Exposure Modelling (Daniel Gomez)
Seismic Vulnerability Modelling (Karim Aljawhari)
Coffee break
Earthquake Scenarios in OpenQuake (Catarina Costa)
Lunch
Earthquake Scenarios in OpenQuake - Group work

THURSDAY

09:00 - 09:45
09:45 - 13:00
13:00 - 14:30
14:30 - 15:15
15:15 - 18:00
20:00 - 22:00

Disaster Impact Assessment at the EU JRC (Marzia Santini)
Earthquake Scenarios - Group work
Lunch
Structural Interventions to Reduce Earthquake Risk (Hugo Rodrigues)
Earthquake Scenarios - Group work
Social Dinner

FRIDAY

09:00 - 09:30
09:30 - 10:00
10:00 - 11:00
11:00 - 13:30
13:30 - 15:00
15:00 - 16:00
16:30 - 17:30

Risk Communication (Catalina Yepes)
Augmented Reality in Earthquake Engineering (Daniel Emilio)
Earthquake Scenarios - Group work
Presentations from the Work Groups
Lunch
OpenQuake Certification Exam
Visit Aveiro - Boat cruise