

# 2 Ph.D. student positions – Geomechanics for engineered geological barriers

## Your mission:

The Laboratory of Soil Mechanics (LMS) at the School of Architecture, Civil and Environmental Engineering at EPFL Switzerland is seeking 2 Ph.D. students to enhance our geomechanical knowledge and predictive capabilities of the mechanical behavior of engineered geological barriers. The 2 Ph.D. students will have to gain insights into the mechanical behavior of compacted expansive clays for different mechanical loads and under different environmental conditions. They will have to develop advanced experimental campaigns and appropriate theoretical and numerical modeling tools. LMS focuses its research activities on the protection from geo-hazards and industrial damage to the environment, landforms, and structures. Our experimental and modeling resources are mobilized to understand, describe and predict the environmental impact of the technologies of future days, such as nuclear waste disposal, petroleum and gas exploitation, transportation and storage, methane hydrate technology, CO<sub>2</sub> geological sequestration, and energy technologies related to heat storage. The LMS is directed by Prof. Lyesse Laloui (more information about the LMS and its current research can be found at <http://lms.epfl.ch/en>). With specific reference to the program of which the two Ph.D. students will be part, the research activities will be crucial for suitably designing and adopting engineered geological barriers internationally.

## Main duties and responsibilities include:

- Carrying out research activities related to the state of the art
- Designing appropriate experimental laboratory campaigns
- Interpreting experimental results within proper theoretical frameworks
- Developing a suitable mechanical stress-strain constitutive model
- Writing scientific journal articles and other documents related to research activities
- Participating in the teaching activities of the laboratory (assisting with exercises, correcting exams, supervising students in research projects)

## Your profile :

- A recent MSc degree in the fields of civil engineering with excellent grades in mechanical and geotechnical subjects
- Interest in geomechanics
- Independent research and scientific reporting skills
- Knowledge of at least one programming language (such as Python or Matlab)
- Proficient oral and written English skills

## We offer :

- The opportunity to acquire advanced geomechanical skills, suitable for pursuing a career in academia or work in high-level engineering companies
- The opportunity of applying research in a top-ranked engineering school, with a young, stimulating, dynamic, interdisciplinary, and international working environment
- Advanced laboratory equipment and modeling expertise
- A competitive salary
- Also, EPFL is an international and world-class engineering university. It offers state-of-the-art facilities, scientific events, and training and hosts a vibrant entrepreneurial community. EPFL is an equal opportunity employer. Candidates will be recruited on merit only.

**Starting date:**

November 2021 or according to availability

**Term of employment:**

Fixed-term (CDD)

**Duration:**

In general, 3 to 4 years

**Contact:**

Please send your application as soon as possible with the subject line «Application for Ph.D. position 2021» to [recruitment.lms@epfl.ch](mailto:recruitment.lms@epfl.ch) in a single pdf file containing all the required information. It shall include your CV and a letter of motivation. Additional documents could be needed at a later stage.