

Sweden:PhD in Soil Mechanics- frozen soil

The research group of Soil Mechanics has an open PhD position in the area of frozen soils. Frost heave is a common phenomenon in the northern part of Sweden. It is usually modeled as one dimensional phenomena even though the boundary conditions under roads or railroads are 2/3 dimensional. Aim of the study will be the reflection of the 2 dimensional modelling of frost heave under a road taking operation and maintenance work during the winter season into account. The work is conducted in close cooperation with Trafikverket, the Swedish road and railroad authority.

SUBJECT DESCRIPTION

Soil mechanics comprises soil material behaviour and foundation engineering, with application to civil engineering, energy and mining. The subject will increase its activities in the area in soil dynamics and enhance laboratory activities.

DUTIES

The PhD student will carry out laboratory and field investigations to be able to quantify frost heave including ice lens growth with access to water. The PhD student will set up a model to analyse cross sections of a road to study the 2 dimensional effects of frost heave on the deformation of roads and simulate various maintenance scenarios. It is planned to create a medium scale test to verify the findings. The PhD student will work in close cooperation with Trafikverket on the identification of appropriate sites.

The PhD studies are 4 year, fulltime. Administration and/or lecturing 20% may be added.

QUALIFICATIONS

The candidate should have a MSc in civil engineering with most preferred a specialization in in soil mechanics and geotechnical engineering. Experience with field or laboratory investigations will be of advantage. Basic knowledge of numerical modeling and being able to use MatLab is a requirement. Fluent English in spoken and written is necessary. Swedish or another Scandinavian language are of advantage.

An individual fulfills the general eligibility requirements for the third-cycle educational programme when he or she 1) has completed a second-cycle degree, 2) has completed higher education courses worth at least 240 credits, of which at least 60 are for second-cycle courses, or 3) in some other manner, in this country or abroad, has acquired the equivalent qualifications.

Read more; [General curricula for the Board of the faculty of science and technology](#)

INFORMATION

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Luleå University of Technology is actively working on equality and diversity that contributes to a creative study- and work environment. The University's core values ??are based on respect, trust, openness and responsibility.

In case of different interpretations of the English and Swedish versions of this announcement, the Swedish version takes precedence.

APPLICATION

We prefer that you apply for this position by clicking on the apply button below. The application should include a CV, personal letter and copies of verified diplomas from high school and universities. Your application, including diplomas, must be written in English or Swedish. Mark your application with the reference number below .

Tentative Submission Deadline : 30 November 2017

[Further Information](#)