

PhD Student in Soil-Atmosphere Interaction

Faculty/department Civil Engineering and Geosciences

Level Master degree

Maximum employment 38 hours per week (1 FTE)

Duration of contract 4 years

Salary scale €2125 to €2717 per month gross

Civil Engineering and Geosciences

The Faculty of Civil Engineering and Geosciences of Delft University of Technology (TU Delft) provides leading international research and education, with innovation and sustainability as central themes. Research and education are closely interwoven and address societal challenges. The Faculty consists of the departments of Transport and Planning, Structural Engineering, Geoscience and Engineering, Water Management, Hydraulic Engineering, and Geoscience and Remote Sensing.

The Department of Geoscience and Engineering encompasses 5 sections: Applied Geology; Applied Petrophysics and Geophysics; Geo-Engineering; Resource Engineering; and Petroleum Engineering. Within the Department there is considerable scope and encouragement for inter-disciplinary research. Current collaborations between Geo-Engineering and the wider Faculty include the Section of Offshore Engineering, and the Departments of Structural Engineering, Hydraulic Engineering, and Geoscience and Remote Sensing.

The Section of Geo-Engineering has 8 full-time and 6 part-time academic staff, and 30 PhD and Post-Doctoral researchers. Areas of expertise include soil mechanics, dykes and embankments, foundation engineering, underground space technology, engineering geology, and geo-environmental engineering. There are extensive experimental laboratory facilities, including large-scale soil-structure interaction testing facilities and a geotechnical centrifuge, as well as excellent computing facilities including access to national High Performance Computing networks.

Job description

Applications are invited for a PhD student in modelling soil-atmosphere interaction, to be based within the Section of Geo-Engineering. The research is funded by the Dutch Research Council STW, and focuses on the processes which govern the response to climatic conditions of dykes mostly made of organic soils, and on the modelling of the consequences of this response on the behaviour and design of dykes. It involves thorough understanding of the coupled physical processes, the development of 3D numerical models of the earth construction under variable climatic conditions, the validation of the model against field data and the assessment of pre-failure and at-failure behaviour of earth-constructions.

The PhD research is part of a larger STW project, entitled "Reliability-Based Geomechanical Assessment Tools for Dykes and Embankments in Delta Areas". The project is supported by the Dutch Foundation for Applied Water Research (STOWA), Dutch waterboards and provinces, Deltares, Plaxis BV, and RPS. The successful candidate

will be one of a team of 4 PhD students and 1 Post Doc, supported by 4 academic members of staff, who will be engaged in field monitoring and testing, laboratory testing, and numerical modelling.

Requirements

Applicants should possess a good first degree in Civil Engineering or other related discipline. An aptitude for numerical modelling is essential, and an interest in physical processes and experimental behaviour is appreciated. Communication skills are important, and applicants should have a high level of proficiency in written and spoken English. The successful candidate will be expected to cooperate closely with other members of the research team.

Conditions of employment

TU Delft offers an attractive benefits package, including a flexible work week and the option of assembling a customised compensation and benefits package (the 'IKA'). Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities.

As a PhD candidate you will be enrolled in the TU Delft Graduate School. The TU Delft Graduate School provides an inspiring research environment; an excellent team of supervisors, academic staff and a mentor; and a Doctoral Education Programme aimed at developing your transferable, discipline-related and research skills. Please visit www.phd.tudelft.nl for more information.

TU Delft sets specific standards for the English competency of the teaching staff. TU Delft offers training to improve English competency.

Information and application

For more information about this position, please contact Prof.dr. C. Jommi, phone: +31 (0)15-2784173, e-mail: c.jommi@tudelft.nl, or Dr. P.J. Vardon, phone: +31 (0)15-2781456, e-mail: P.J.Vardon@tudelft.nl. To apply, please e-mail a detailed CV, a letter of application and the names and contact details of two referees by 28 June 2015 to Drs. D. Verbunt, Recruitment-CITG@tudelft.nl.

When applying for this position, please refer to vacancy number CITG15-19.