

Centre for Offshore Foundation Systems Postgraduate Research Opportunity Oceans Graduate School

Since its establishment in 1997, the Centre for Offshore Foundation Systems (COFS) at the University of Western Australia has developed into one of the most sophisticated research and modelling facilities in offshore geomechanics and engineering anywhere in the world. A large team of internationally recognised researchers, consulting engineers and technical staff work together to solve some of the key engineering challenges of today and tomorrow, both for the oil & gas and offshore renewable energy industries. Our work on the mechanics of seabed sediments and offshore foundations systems provides pivotal support to the local and global engineering community. Further, COFS is embedded in the multi-disciplinary Oceans Graduate School, which brings together experts in physical oceanography, hydrodynamics, coastal engineering and related fields.

Predicting foundation response for offshore wind turbines Supervised by Britta Bienen, Conleth O'Loughlin

The aim of this research is to predict the installation and in service response of suction buckets supporting offshore wind turbines. This foundation concept is now being adopted in offshore wind farm designs. Following self-weight penetration into the seabed, the bucket is installed by pumping water out of the bucket, which creates a pressure differential across the lid and drives further penetration. In service, the foundation needs to resist the cyclic loading imposed on the turbine from the ocean environment. The mechanisms of suction installation (in layered soils in particular) and the effects of the installation process on the soil state are poorly understood. The evolution of foundation stiffness and displacement underpin the design. The research will be predominantly experimental, utilising recently developed purpose-designed experimental facilities. The project is a collaboration with Lloyd's Register EMA and Melbourne University.

Applicants are expected to secure a scholarship stipend (closing date 5 April 2019), which also covers tuition fees (if applicable). Students who wish to apply must have achieved first class honours in a relevant degree, and meet the English requirements for enrolment at UWA.

To submit your interest to do a PhD on this project, please email your information:

- ❖ resume
- ❖ full academic transcripts
- ❖ details of any published papers
- ❖ results of English test such as IELTS (if applicable)

to Britta Bienen at britta.bienen@uwa.edu.au.

For information on scholarships and to apply visit
www.scholarships.uwa.edu.au/future-students/postgrad/international.

Further information about our research centre is available under
www.cofs.uwa.edu.au, www.ngcf.edu.au.

