UWA Industry-Focused Offshore Engineering PhD in Fluid-Soil-Structure Interaction

We are seeking highly capable and self-motivated PhD candidate for a PhD project in assessing the effects of fluid-soil-structure interaction on trench formation around moorings and risers (see right). This project will be undertaken within The Industrial Transformation Research Hub for Offshore Floating Facilities (OFFshore ITRH: see http://offshorehub.edu.au/ for further information and other PhD opportunities).

The Offshore ITRH is partnered with Shell, Woodside, Bureau Veritas and Lloyds Register who will provide additional training and access to their proprietary technology and data in order to add industry know how and practical relevance to your research.

To be eligible for the PhD positions you should have a strong first degree that included courses on hydrodynamics, fluid mechanics and preferably offshore/ocean engineering. You should be looking to complete your PhD degree on a topic with strong relevance to industry, starting your study early 2018.

Applicants are expected to be eligible for a UWA scholarship, e.g. an International Research Training Program (non-Australians) or Research Training Program (Australians) scholarship (see http://www.scholarships.uwa.edu.au/ for more information), although this requirement may be waived in exceptional cases. For those applicants who secure a UWA scholarship, top-up funding is available which brings the total tax free stipend to AUD$35,500.

Further information: Prospective PhD candidates may contact Prof Christophe Gaudin at christophe.gaudin@uwa.edu.au for additional information on the proposed research project.

To apply: Please send your application including resume, full academic transcripts, details of any papers you have authored and the results of any English test you have sat within the last 2 years (such as IELTS or TOEFL – not needed for Australian citizens) to admin-cofs@uwa.edu.au.

Project 1: Mechanisms of trench formation around risers and moorings – This project will investigate the underlying mechanisms that lead to trench formation within the touchdown zone of steel catenary risers and around mooring chains of semi-taut anchoring systems. The work will primarily focus on experimental modelling of risers and chains penetrating cyclically into fine-grained sediment to explore the interaction between both sediment erosion and plastic deformation, remoulding, and reconsolidation of the seabed.

Project 2: Improved methods of fatigue prediction for drilling risers – This project will investigate whole of life modelling of the soil-structure interaction which occurs within the upper region of the seabed. This aims to capture the remoulding-consolidation processes which occur within this fatigue critical location. The work will be a mix of experimental modelling of drilling risers subject to realistic load cycles, and the development of numerical models to define whole-life interface p-y curves and hence the associated riser fatigue life.