



Position Title:	Research Fellow – AT3 Hydro-Sediment
Position Classification:	Level B
Position Number:	319579
School:	Oceans Graduate School
Supervisor Title:	Professor
Supervisor Position Number:	310935

Your work area

This position is within the ARC Industrial Transformation Research Hub for Transforming energy Infrastructure through Digital Engineering (TIDE ITRH), based at the Indian Ocean Marine Research Centre (IOMRC) at UWA.

The TIDE ITRH comprises four interlinked research themes working together to deliver projects using state of the art data science and engineering techniques to transform the operation of energy infrastructure. The research is a blend of physical and numerical modelling, supported by fieldwork and the robust analysis of key observations from existing facilities. Our industry partners are helping to shape the research direction, drive technology transfer, and assist with mentoring our researchers and students.

The position will be part of the Oceans Graduate School (OGS). The OGS is home to a critical mass of researchers spanning ocean engineering, oceanography and marine science. The OGS hosts the Centre for Offshore Foundation Systems, the Wave Energy Research Centre, the ARC Research Hub for Offshore Floating Facilities, Woodside's FutureLab collaboration network, and the ARC Centre of Excellence for Coral Reef Studies. OGS researchers conduct world-leading research to provide ocean solutions in relation to the marine environment and resources, engineering and technology.

Your role

To work with the Chief Investigators (CIs), Partner Investigators (PIs) and industry partners to undertake geotechnical research within the Applied Theme 3 (Managing living infrastructure on an evolving seabed) research theme.

As the appointee you will, under limited direction of the UWA supervisors, participate in and coordinate the experimental, analytical and other research work, relevant to the study of local scour, hydrodynamic loading and vortex induced vibration (VIV) of free-spanning sections of subsea pipelines and cables. The successful candidate will be an experienced researcher with skills in conducting physical model experiments and/or developing numerical models to better understand flow-structure (or flow-structure-seabed) interactions. The position requires a strong background in hydrodynamics and the mechanics of scour. Experience working with the offshore energy would also be desirable.

Core duties of the position will include the development of novel testing methods to investigate VIV of a free-spanning pipelines above a realistic seabed using the Large O-tube facility at UWA (more details available here: <https://www.uwa.edu.au/facilities/coel-labs/o-tube>) and larger-scale testing facilities operated by our international research partners. The effect of local scour on VIV needs to be considered, together with an understanding of how the experiments will inform the prediction of VIV in field conditions. To assist with this, a significant database of existing and future field data will be available to inform the research program and to enable validation of the laboratory testing.

The multi-disciplinary nature of the project will require the applicant to participate in collaboration across the fields of oceanography, hydrodynamics, geotechnics, marine structures and data science.

Key responsibilities

To develop and lead physical, numerical and analytical modelling to investigate VIV of pipeline and cable free-spans and to develop technology and design approaches aimed at better predicting VIV and providing engineering guidance for improved free-span mitigation.

Collaborate and engage with the TIDE ITRH industry partners and the wider oil and gas industry at a local, national and international level.

Work collaboratively with other researchers and students engaged in the research team

Promote research projects via publication of research papers and presentations at international conferences and workshops.

Support transfer of the TIDE ITRH research into practice in collaboration with the TIDE ITRH industry partners.

Supervise and assist in the training of undergraduate, masters, and PhD students

Assistant in establishing the computing systems to support the storage, quality control and analysis of datasets from an extensive array of historic and real-time data streams.

Participate in the TIDE ITRH activities and contribute to/organize group projects, workshops and other processes.

Other duties as directed.

Your specific work capabilities (selection criteria)

A PhD or equivalent industry experience in hydrodynamics or geotechnical engineering, with a specialisation in scour, or a closely related field.

Relevant research experience (or advanced engineering practice) and expertise at an appropriate level in one or more of the following areas: hydrodynamics, sediment transport and scour, subsea/pipeline engineering, structural dynamics.

Demonstrated originality, creativity and innovation in the application of expert scientific knowledge.

Experience preparing manuscripts for publication and giving presentations at conferences.

Strong track record of research publication relative to opportunity.

An ability and willingness to direct and supervise students.

Experience in synthesising research outcomes into design guidance documents is desirable, but not essential.

Experience interacting with and/or working in the offshore engineering industry.

Highly developed written and verbal communication skills.

Ability to work independently, show initiative and work productively as part of a team.

Highly developed organisational skills and demonstrated ability to set priorities, meet deadlines and conduct research

Demonstrated commitment to service roles in the workplace.

Demonstrated commitment to inclusivity and diversity in the workplace.

Special Requirements

None

Compliance

Workplace Health and Safety

All supervising staff are required to undertake effective measures to ensure compliance with the Occupational Safety and Health Act 1984 and related University requirements (including Safety, Health and Wellbeing Objectives and Targets).

All staff must comply with requirements of the Occupational Safety and Health Act and all reasonable directives given in relation to health and safety at work, to ensure compliance with University and Legislative health and safety requirements.

Details of the safety obligations can be accessed at <http://www.safety.uwa.edu.au>

Equity and Diversity

All staff members are required to comply with the University's Code of Ethics and Code of Conduct and Equity and Diversity principles. Details of the University policies on these can be accessed at http://www.hr.uwa.edu.au/publications/code_of_ethics, <http://www.equity.uwa.edu.au>