Shell internship opportunities

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SUBJECT	Internship opportunities for IMAU students with Shell Metocean Team Rijswijk

Scope

This document lists the different options for IMAU students to do an internship with the Shell metocean team in Rijswijk. It is intended as a reference for IMAU staff to provide an overview of the different options for internships and associated requirements. Finally, a high level overview of potential topics for internships is given and currently available scopes are listed.

Overview

Shell generally offers two types of internships: assessed and non-assessed.

1. Assessed internships: are suitable for people who would like to work for Shell and result in a job offer upon successful completion. An assessed internship provides a great opportunity to experience what it's like to work for Shell, working on topics that actively contribute to Shell's business. Assessed internships can be of varying length and can constitute (part of) a master thesis. Minimum duration of assessed internships is 3 months, but longer duration is preferred, particularly for technical internships. A typical example of an assessed internship is a student working on a 7 month project that satisfies academic requirements for a master thesis as well as providing business value to Shell.
   Assessed internships result in a job offer from Shell upon positive evaluation, and therefore entry criteria are in place. Students will have to apply online and are required to successfully complete a range of tests and an interview before being offered an internship.
2. Non-assessed internships: are suitable for people who would like to experience working for Shell, but do not result in a job offer upon completion as no formal assessment is in place. Students wishing to apply for a job after a non-assessed internship will have to apply through the regular channels. Non-assessed internships have a minimum duration of 1 month, but longer duration is preferred, particularly for technical internships. A typical example of a non-assessed internship is a summer student working for 2-3 months on a well-defined business scope.

What is metocean in Shell?

Metocean (meteorology and oceanography) is about describing the metocean conditions prevailing in an area, deriving design criteria, providing operational statistics and providing, weather ocean and ice forecasts for design and operational planning to promote both safe and efficient operations. Metocean Engineering is part of the Civil, Structures and Offshore Engineering Department. In summary, metocean is about the weather and the oceans and their impact on design, construction and operations.

Topics

The following topics are potentially of interest for students with a thorough grounding in meteorology and oceanography. These have not been worked out to clear scopes yet. The opportunity to do projects on these topics will depend on business need.

- Squalls
- Solitons and internal waves
- Long term climate variability (20-40 years)
- (Arctic) Climate Change
- Icebergs
- Tropical Cyclones
- Sea ice prediction
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Scopes

One worked out scope for an (MSc) project exists and is attached with this note. Outlines of potential scopes that require further definition are also given.

- Development of an operational iceberg drift model, Phase III (MSc project proposal). For details please refer to the following scope.

MSc-IcebergDriftMod
eling-Phase3-2014.pc

Potential scopes:

- **Soliton prediction methodology / Soliton modelling 3D**
  Solitons can have a large impact on floating structures and risers. Using numerical models to simulate these waves and their impact on structures is a topic for a potential project.

  Risk assessment FLNG offloading to Solitons
  i) modeling of solitons using links to Kevin Lamb's numerical model previously developed in collaboration with Shell
  ii) modeling the response of FLNG to solitons external body forcing
  iii) assessment of the risks/uncertainties and providing a business context

- **Impact of tides on wave heights in the UK sector of the Southern North Sea**
  Extreme wave heights are crucial in design of offshore structures. This project is aimed at gaining a better understanding of the dependence of wave heights on tidal water levels, thereby improving design criteria and de-risking design.

- **Numerical modelling of offloading operability**
  Estimation of offloading (transfer of hydrocarbons between two floating bodies) operability depends on accurate modelling of vessel behaviour and optimal description of metocean forcings.

> **Characterization of metocean environment for offloading operability**
> - Offloading operability assessments require significant computing time
> - Increase speed is desirable to respond quickly to project decisions
> - A method is to be developed to improve binning of metocean databases to reduce computational effort whilst retaining fit-for-purpose accuracy in operability assessments.