UCLouvain

lgciv2074

2018

Offshore Geotechnics

4 credits	20.0 h + 15.0 h	Q2

This biannual learning unit is not being organized in 2018-2019 !

Teacher(s)	Spinewine Benoît ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	The objective of the course is to provide an introduction to current geotechnical engineering practice in offshore conditions. Over the last decades, offshore geotechnical engineering has grown up as an independent branch of geotechnical engineering due to significant differences in the scale of foundation elements dealt with but also due to the challenging soil behaviour characterization. The course will cover site geotechnical and geophysical exploration techniques, soil characterization, and basic design approaches for a number of foundation elements often used in offshore structures, such as suction caissons, piles, anchors and spudcans, as well as elements of pipeline geotechnics.
Aims	**Contribution of the course to the program objectives (N°)** AA1.1, AA1.2, AA2.1, AA2.3, AA2.5, AA3.1, AA6.1 **Specific learning outcomes of the course** At the end of the course, the student will be able to: 1 • Describe the current techniques of offshore geotechnical and geophysical site investigation and their fields of application. • Describe the nature of marine soils, their geological context, their behaviour, and identify potential issues. • Identify the most significant parameters that affect the performance of offshore foundation elements. • Determine the capacity of foundation elements and anchors. • Determine the pipeline/soil interaction parameters - - - - *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Evaluation methods	Will be given during the first course.
Content	The course will cover the following subjects: • Introduction to offshore structures and industry (oil & gas, renewable) • Offshore geotechnical and geophysical survey methods • Specifc behaviour (calcareous sand, cemented soil, cyclic loading) • Offshore foundation types and their relevance. • Installation and bearing capacity of suction caissons, gravity base or shallow foundations, anchors, spudcans, piles • Elements of pipeline geotechnics • Elements of pipeline/cable trenching and protection methods
Inline resources	Available on Moodle.
Bibliography	Randolph and Gourvenec. Offshore Geotechnical Engineering.
Faculty or entity in charge	GC

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Civil Engineering	GCE2M	4		🔍