GHENT UNIVERSITY

Course Specifications

From the academic year 2020-2021 up to and including the academic year

Dredging and Offshore Constructions (C002642)

Course size *(nominal values; actual values may depend on programme)*

Credits 3.0	**Study time 75 h**	**Contact hrs** 30.0h

Course offerings and teaching methods in academic year 2022-2023

A (semester 2)	English	Gent	project	15.0h
			lecture	15.0h

Lecturers in academic year 2022-2023

Stuyts, Bruno	TW15	lecturer-in-charge
Gruwez, Vincent	TW15	co-lecturer

Offered in the following programmes in 2022-2023	**crdts**	**offering**
Master of Science in Environmental Science and Technology	3	A
Master of Science in Geology	3	A
Exchange programme in Geology (master's level)	3	A

Teaching languages

English

Keywords

Dredging, coastal engineering, offshore, platforms, pipelines.

Position of the course

The course on dredging and offshore works is to be classified as typical "application course". The course presents the differnt offshore structures, the forces working on them and the resistance generated by foundation elements. Geotechnical site investigation and cable routing and installation are also introduced. Furhermore it gives basic information on the possibilities and limitations of dredging equipment and the processe of importance for dredging.

Contents

- 1. Offshore construction
- 1.1 Exampels of offshore structures
- 1.2 Types of offshore structures
- 1.3 Wave forces on offshore constructions
- 1.4. Offshore geotechnical site investigation
- 1.5. Introduction to offshore foundation geotechnics
- 1.6. Introduction to cable routing and installation
- 2. Dredging
- 2.1. Dredging equipment
- 2.2. Geotechnical investigation on behalf of dredging works
- 3.3. Dredging processes

Initial competences

Basic knowledge on hydraulics and geotechnics.

Final competences

1 The student knows the imporatant offshore structures and had insight in the forces working on these structures.
2 The student has gained insight in some important foundation construction and when to apply what type of foundation.
3 The student has gained a understanding of the different processes related to dredging.
4 The student is able to judge on the choice of the most suitable dredging

equipment for a specific job.
5 The student can apply his acquired knowledge in a simple projects based on practice.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, Project

Learning materials and price

Lecture notes, available from Ufora

References

- Lecture notes on Dredging equipment and technology by Prof. W. Vlasblom. (http://www.dredging.org/content.asp?page=105)
- Lykke Andersen, T.; Frigaard, P. (2007): Lecture notes for the course in 'Water wave mechanics'. Department of Civil Engineering,
- DCE Lecture Notes No. 16, Aalborg, Denmark, 111 p. Journée,
- J.M.J.; Massie, W.W. (2001): Offshore hydromechanics. Delft University of Technology, 530 p.
- Vannuci, D. (2011): ORECCA project: Technologies - state of the art. 120 p.
- Kortenhaus, A.; Vanneste, D. (2013): Wave forces on slender cylindrical piles. Department of Civil Engineering, Lecture Notes for 'Offshore Structures', Ghent, Belgium, 26 p.

Course content-related study coaching

Study coaching by professors assisted by post-doctoral and doctoral researchers.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Oral examination

Examination methods in case of periodic assessment during the second examination period

Oral examination

Examination methods in case of permanent assessment

Report

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

Periodic evaluation (during examination period): oral exam.
Non-periodic evaluation (during semester): evaluation of reports on project assignments. In the project assigment the forces on an offshore structure are calculated and the foundation dimensioned. Students submit the reports before the start of the periodic evaluations, according to the terms announced during the lectures and via Ufora. If not submitted the reports in time, without a valid and timely communicated reason for it, then the student will receive a 0 for the nonperiodical evaluation. For the non-periodic evaluation, a second chance is only possible in modified form, if less than 10 in 20 was achieved.

Calculation of the examination mark

- The periodic evaluation (wriiten or oral exam) counts for 60% of the total, the non-periodic evaluation (project work) for 40% of the total.
- If for one or both evaluations (exam or project work) less than 10 (in 20) is scored, then this part is counted for 70% and the other part for 30%.
- In case of project work with some students: If there is a clearly different input of students in one group, the mark can be different for the students in that group.