

Open Channel Hydraulics (1002661)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

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

Credits 4.0 **Study time** 120 h **Contact hrs** 40.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	lecture	20.0 h
			seminar: practical PC room classes	20.0 h

Lecturers in academic year 2020-2021

Verhoest, Niko LA20 lecturer-in-charge

Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Bioscience Engineering: Land and Water Management	4	A

Teaching languages

Dutch

Keywords

Flow in rivers

Position of the course

This course provides the knowledge needed to understand, calculate and model the flow in open water courses.

Contents

- 1 Classification of flow types in open water courses
- 2 The equations of de Saint-Venant
- 3 Stationary flow in prismatic channels (uniform flow, specific energy, critical depth, types and calculation of flow profiles, hydraulic jump)
- 4 Flow through orifices, under gates and over weirs
- 5 Non-stationary flow in prismatic channels
- 6 Non-stationary flow in river systems
- 7 Flood inundation modelling

Initial competences

Open channel hydraulics builds upon certain learning outcomes of course units 'Fluid mechanics' and 'Hydrological processes and hydrometry'; or the learning outcomes have been achieved differently.

Final competences

- 1 To understand the flow in open water courses
- 2 To calculate flow profiles in a prismatic canal in a permanent regime
- 3 To explain the physical background in the use of weirs for measuring discharge.
- 4 To understand the numerical modelling of flow in river systems, including floods.

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, seminar: practical PC room classes

Extra information on the teaching methods

The theory is taught during lectures. Exercises exist of solving problems that demonstrate the theory.

Learning materials and price

A syllabus is available (in Dutch). Estimated cost: 12 EUR

References

Chow V.T., Open-channel hydraulics, McGraw Hill Book Company, Inc, 1959
Chanson H., The hydraulics of open channel flow, John Wiley & Sons, 1999

Course content-related study coaching

Possibility to ask questions during and after lectures and availability of the lecturer for questions and additional information with regard to theory and practice.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Written examination with open questions, oral examination

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

Written examination with open questions, oral examination

Examination methods in case of permanent evaluation

Report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Closed book exam

Calculation of the examination mark

Theory (period aligned evaluation): 40%
Exercises (period aligned evaluation): 20%
Exercises (non-period aligned evaluation): 40%

Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.