

Port Technology (B001426)

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

Credits 5.0 **Study time 150 h**

Course offerings and teaching methods in academic year 2026-2027

A (semester 1)	English	Gent	lecture
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Lecturers in academic year 2026-2027

De Baets, Patrick	TW08	lecturer-in-charge
Troch, Peter	TW15	co-lecturer

Offered in the following programmes in 2026-2027

Master of Science in Maritime Science	crdts	offering
	5	A

Teaching languages

English

Keywords

port, mechanical energy conversion, mobile transport, infrastructure, transport material, civil constructions, hydraulic engineering structures

Position of the course

It is intended to provide to the students knowledge and understanding of the main mechanical equipment used in the port to transport or to store goods, and also on the construction of the port as a building project.
Students learn to critically reflect on the construction, functioning and operation of the main port infrastructure. Technical thinking is taught.

Contents

Mechanical equipment

- Machinery for energy conversion: pumps compressors, motors
- Machines for mobile transport: trucks, rail vehicles, cranes, quayside vehicles

Structural infrastructure

- Hydrodynamic loads of waves and tides in a port
- Hydraulic engineering structures: waterways (rivers and canals), locks, dikes and breakwaters as coastal defense, quay walls, ...
- Planning of the port
- General design of terminals

Initial competences

The course builds on the secondary school education and essentially makes use of concepts from physics and elementary mathematics. A technical training is not expected.

Final competences

- 1 Being able to use mechanical and architectural technical vocabulary in passive and active way.
- 2 Having knowledge of the main mechanical and structural equipment of a port.
- 3 Understanding the functionality and basic principles of mechanical energy conversion machinery, transport vehicles and hydraulic structures.

Conditions for credit contract

This course unit cannot be taken via a credit contract

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture

Extra information on the teaching methods

Lectures about the specific topics of the courses content, with the possibility of asking questions

No lesson recordings are being made.

Study material

None

References

Agerschou Hans et al, Planning and design of ports and marine terminals, John Willey and Sons

Course content-related study coaching

Opportunity to consult with the teachers after the lectures or by appointment

Assessment moments

end-of-term assessment

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

Oral assessment

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

Oral assessment

Examination methods in case of permanent assessment**Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

Extra information on the examination methods

The material to be studied for the exam will be announced via Minerva.

The exam allows the student to demonstrate his / her basic knowledge and understanding of the course matter

The exam itself is organized as follows:

About each part (mechanical / civil) 2 to 3 open questions will be given, that the students can prepare in written way. The total time available for the written preparation is 30 to 45 minutes. The written preparation should be structured, complete but concise (no sentences!) and properly elaborated. Particular attention should be paid to figures and graphs. The written preparation will also be reviewed and should form a readable document.

Then the students should briefly explain their written preparation to the examiners. Subsequently a number of questions will be posed that gauge understanding of the matter (of the written preparation), the detailed knowledge of the matter (of the written preparation) and the knowledge of the other parts of the course. The oral part takes up to 30 minutes.

Calculation of the examination mark

Both parts of the course (mechanical / civil) have an equal weight.

The total score is calculated as the average of the scores for the two parts.

If one has less than 10/20 for one of the components, one can no longer pass the whole of the course. If the mathematically averaged final score were nevertheless a mark of ten or more out of twenty, this will be reduced to the highest failed mark (namely 9/20).

If one does not participate in the evaluation of one of the components, one can also no longer pass the entire course unit and the final grade, if it is higher than 7/20, is reduced to the highest non-deliberable grade (7/20).