GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2021-2022

Advanced Railway Technology (E053643)

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 3.0 **Study time 90 h** **Contact hrs** 25.0 h

Course offerings and teaching methods in academic year 2022-2023

A (semester 2)	English	Gent	excursion	10.0 h
			lecture	15.0 h

Lecturers in academic year 2022-2023

Bonne, Hendrik	TW08	lecturer-in-charge

Offered in the following programmes in 2022-2023	**crdts**	**offering**
Master of Science in Electrical Engineering Technology (main subject Automation)	3	A
Master of Science in Electromechanical Engineering (main subject Control Engineering and Automation)	3	A
Master of Science in Electrical Engineering Technology (main subject Electrical Engineering)	3	A
Master of Science in Electromechanical Engineering (main subject Electrical Power Engineering)	3	A
Master of Science in Electromechanical Engineering (main subject Maritime Engineering)	3	A
Master of Science in Electromechanical Engineering (main subject Mechanical Construction)	3	A
Master of Science in Electromechanical Engineering (main subject Mechanical Energy Engineering)	3	A
Master of Science in Electromechanical Engineering Technology	3	A

Teaching languages

English

Keywords

railway traffic, rolling stock, traction, ecology, infrastructure

Position of the course

The course is a follow up course of railway technology 1, focusing on the interface between infrastructure and rolling stock as well as adding a few key domains within railway technology.

Contents

- Railway infrastructure and energy distribution
- Rolling stock maintenance basics, reliability engineering
- Design project: construction of rolling stock
- The influence of technological evolution on the development of railway technology in the world
- Innovation and future trends in railway technology
- Railway technology environmental aspects

Initial competences

Railway technology basics of railway technology 1; mechanical, electrotechnical and electronics basics

Final competences

1 Being able to explain design choices in rolling stock.
2 Understanding the limits of ecology within the railway system.
3 Understanding the basics of rolling stock maintenance.

4 Understanding railway infrastructure and the interface between rolling stock and infrastructure.
5 Situating railways within an historical perspective and within the transport world.

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

Excursion, lecture

Extra information on the teaching methods

Visits are aimed at transport operations and rolling stock maintenance.
Lecture, online lecture, seminar, design project, excursion.

Learning materials and price

Lecture notes provided by lecturer (5 euros).

References

Course content-related study coaching

Evaluation methods

end-of-term evaluation

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

Oral examination

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

Oral examination

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

During examination period: oral closed-book exam

Calculation of the examination mark