

## Advanced Railway Technology (E053643)

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

**Credits 3.0**                      **Study time 90 h**

**Course offerings and teaching methods in academic year 2025-2026**

A (semester 2)	English	Gent	excursion lecture
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**Lecturers in academic year 2025-2026**

Bonne, Hendrik	TW08	lecturer-in-charge
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**Offered in the following programmes in 2025-2026**

	crdts	offering
<a href="#">Master of Science in Electrical Engineering Technology(main subject Automation)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering(main subject Control Engineering and Automation)</a>	3	A
<a href="#">Master of Science in Electrical Engineering Technology(main subject Electrical Engineering)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering(main subject Electrical Power Engineering)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering(main subject Maritime Engineering)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering(main subject Mechanical Construction)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering(main subject Mechanical Energy Engineering)</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering Technology</a>	3	A

**Teaching languages**

English

**Keywords**

railway traffic, rolling stock, traction, ecology, maintenance, 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**

- energy distribution
- Rolling stock 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
- rolling stock on board monitoring

**Initial competences**

Railway technology fundamentals; 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**

Group work, 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.

**Study material**

Type: Syllabus

Name: Advanced Railway Technology

Indicative price: € 5

Optional: no

Language : English

Number of Pages : 150

Available on Ufora : No

Online Available : No

Available in the Library : No

Available through Student Association : No

Additional information: the course might be available via the student organization

**References****Course content-related study coaching****Assessment moments**

end-of-term assessment

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

Oral assessment, Assignment

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

Oral assessment, Assignment

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

not applicable

**Extra information on the examination methods**

During examination period: oral closed-book exam

**Calculation of the examination mark**