

## Railway Technology Fundamentals (E053642)

**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 1)	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</a>	3	A
<a href="#">Master of Science in Electromechanical Engineering Technology</a>	3	A
<a href="#">Master of Science in Mechanical and Electrical Systems Engineering</a>	3	A

**Teaching languages**

English

**Keywords**

spoorvervoer, rollend materieel, tractie, remsystemen, veiligheid, adhesie, loopstabiliteit  
railway transportation, rolling stock, traction, braking, safety, adhesion, running stability

**Position of the course**

This course treats the basics of railway technology. It is an application of mechanics and electrotechnical technology.

**Contents**

- Railway transport: context, economical, ecological and sociological aspects
- traction systems: types
- Rolling stock: basic concepts, traction equipment, braking systems
- Railway guidance: driving resistance, adhesion, power, running stability
- Propulsion of train vehicles
- tracks

**Initial competences**

mechanical, electrotechnical and electronics basics

**Final competences**

- 1 Being able to explain electrical traction.
- 2 Being able to explain running stability.
- 3 Being able to make choices in rolling stock braking systems.

**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**

Company visits are aimed at rolling stock and train operation

**Study material**

Type: Syllabus

Name: Railway Technology Fundamentals

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

**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**

not applicable

**Extra information on the examination methods**

During examination period: oral closed-book exam

**Calculation of the examination mark**