



Blended
Intensive Programme:
**International railway
technology and operations +
calculate CO₂- footprint:
practical skills for climate
change, 5.0 ECTS**

November 13 – December 13 , 2023

St. Poelten UAS, Dept. Rail Technology and Mobility, Austria

Overview

In this course, participants will gain knowledge on historical background and the state of the art in the field of international railways. They broaden those perspectives in the international railway system operations. They will understand the complexity of interdependencies of subsystems in the railway system and develop an attitude towards the integration of that knowledge in practice. The course is also dedicated to exploring the current international research activities in the field. Moreover, the participants will be able to calculate a carbon footprint using the simple example of their own "living environment" and use the knowledge to apply it in their private/companies use cases.

Course Contents

- Railways in the Australian states, a technical divided network – Technical overview about Australian railways. Traffic systems in Victoria, Melbourne, development of urban and suburban areas, future of Victorian Rail Network
- Railway transport logistic processes in Lithuania. Lithuanian railways stations operation organization principles. Lithuanian railways signals signalization principles. Lithuanian railway transport system and introduction to Rail Baltic. History of rail transport and Railway projects in Estonia. Differences in traffic management systems (e.g., Austria vs Estonia)
- Introduction to the railway system in Japan as well as New Zealand
- CO₂-Footprint: methodological approach and the calculation principles and specific applications

Schedule

Friday, November 13, 2023 (online)

4:00 – 5:30

Introduction to the BIP during the international week and getting to know each other.

Physical week

Monday, November 27, 2023

8:00-9:00 Registration

9:40 – 11:15

History of rail transport and Railway projects in Estonia.

Differences in traffic management systems (Austria vs Estonia)

11:20 – 12:55

Presentation of Vilnius Gediminas Technical University and Lithuanian railway transport system.

Introduction to Rail Baltic project

1:50 – 2:35

Railway transport logistic processes in Lithuania

4:30

City Tour St. Pölten

7:00

Dinner in St. Pölten

Tuesday, November 28, 2023 (online)

8:00 – 12:55

Railways in the Australian states, a technical divided network – Technical overview about Australian railways; Interstate operations – Connecting a continent.

1:50 – 6:00

Vienna City Tour & Visit of Christmas Market @Rathhaus (Lectures only)

Wednesday, November 29, 2023

8:00 – 9:45

Traffic systems in Victoria, Melbourne, development of urban and suburban areas, Future of Victorian Rail Network – Part 1

10:30 – 5:30

Excursion: Mariazellerbahn

6:00

Conference dinner (Lectures only)

Thursday, November 30, 2023

8:00 – 11:00

Presentation of the European initiative OCORA for the future signaling on-board systems based on a modular safety concept

11:00 – 12:30

Railway system and high-speed railway construction in Czech Republic

1:50 – 5:55

Calculation of CO₂ – Footprint

Friday, December 1, 2023

8:00–1:00

Overview New Zealand Rail Network and Auckland / Wellington Networks

Operational Characteristics (Service Level, Timetable, Dwell Times, Passenger Flow, Ticketing) for regional, suburban and freight services

Wednesday, December 13, 2023 (online)

3:30 – 6:00

Presentation of CO₂- Footprint calculations and discussions