



Course

Refrigerated Transport Technology

Common questions amongst refrigerated transport professionals: How does a transport refrigeration unit work? How to make refrigerated transport more sustainable? How do packaging and stowage affect temperature gradients? What drives dehydration and condensation? How to control gas conditions (oxygen, CO₂, ethylene)? Which defrost interval and humidity should I set? This course provides you with the answers and more to excel in refrigerated transport.

Target group

The target audience consists of transport refrigeration related professionals; cargo surveyors, transport equipment designers, persons deciding / advising on packaging and cargo stowage, and all other professionals who need to understand what drives transport conditions and energy efficiency in refrigerated transport. The course is relevant to any perishable cargo, e.g. fruits, meat, seafood and non-food products like flowers and pharmaceuticals.

Results

After completion of this course, you have learned the basics of refrigerated transport technology and understand how to apply this technology to control temperature, humidity and gas atmosphere conditions during transportation in an energy-efficient way leading to optimisation of the total cold chain. Our climate chamber test learnings that are used in this course give you unique insights and learning experience.

Date	16 June 2025
Location	Wageningen Campus
Duration	1 day

Course leader Dr *ir.* Leo Lukasse,
Wageningen Food & Biobased
Research

Outline and topics

The course offers a mix of online self-study (1,5 hrs), and a programme on campus with lectures. One lecture is given in a reefer container, explaining its main components.

This course gives you an in-depth understanding of:

- Using refrigerated transport to its full effectiveness.
- Thermodynamics principles of refrigeration systems.
- Differences and analogies between reefer containers and reefer trailers/trucks.
- Dehydration and condensation.
- The effect of packaging and stowage on temperature gradients in containers.
- How to control oxygen, CO₂, ethylene.
- Remote monitoring and digital twins.



Programme

Advised Online Self-Study (1,5 hrs)

Before you come to Wageningen you can self-study knowledge clips on the **Basics of Refrigeration Technology** at your own pace.

Monday 16 June 2025

- **Welcome and Introduction**
- **Heat loads and the basics of refrigeration technology**
- **Factors affecting temperature deviations in reefers**
- **How packaging and stowage affect temperature during transport**
- **Refrigerated trucks and reefer containers (sea/ road/ train)**
- **Explanatory visit reefer container:**
Explanation of the function of the main components
- **Humidity**
- **Controlled Atmosphere technology (CA)**
- **Remote monitoring and digital twins**
- **Certificate and network drinks**

During the in-person programme in Wageningen there is adequate time to interact with the experts and other participants.

You can combine this course with our connected Fresh Food Quality course 17-20 June 2025

This course includes a one-day field trip to selected companies and hands on experiments with postharvest technology guided by experts from Wageningen University & Research. For more information on this 4-days programme visit the [website](#).



Practical information



The course fee is € 725,- per person and covers tuition, visit reefer container, course materials, lunch and refreshments.



Between 20 and 35 participants.



After attending this course a certificate is issued.

Registration

Enrollment is possible until the maximum number of participants is reached. Register via wur.eu/academy.

If you register for both the Refrigerated Transport Technology (16 June) course and our connected Fresh Food Quality course (17-20 June) you receive a discount of € 250,- on the total course fee.

Wageningen Academy

We develop and organise courses for professionals, based on Wageningen University & Research expertise.

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