Research School for Transport, Infrastructure and Logistics

Research School for Operations Management and Logistics

= Preliminary =

Course
Freight Transport Management

Date:	**17 September, 8 & 29 October, 26 November 2014**
Time:	**10.00 – 16.00 h.**
Location:	**Schiphol, Dinalog, Evert van de Beekstraat 356, SADC (2nd floor), Building C**
Course leaders:	**Prof. Iris Vis and Prof. Tom van Woensel**
ECTS:	**1 (attendance) / 4 (with assignment)**
TUD GS credits:	**2 (attendance) / 5 (with assignment)**
Days:	**4**
Course fee:	**Free for TRAIL/Beta/OML members, others please contact the TRAIL office**
Registration:	**info@rstrail.nl**

Objectives
You will learn to:

- describe transportation networks, city logistics operations and distinguish between related synchronization issues in the network;
- design and apply models and solution approaches for port logistics;
- design and apply mathematical models and solution approaches to solve specific decision problems such as vehicle routing and scheduling;
- indicate the challenges and solve specific decision problems in synchromodal transportation networks.

Course description
The aim of this course is to learn how to plan and control transport operations in supply chain networks. We study how to design and apply solution approaches to deal with typical decision problems that arise in transportation networks to make sure that the presented objectives will be met. In this course, we show you both qualitative and quantitative approaches to reach this goal for both city logistics as well as long distance freight transportation. We study several types of facilities in more detail such as ports and cross-docking facilities. We treat various decision problems at the tactical and operational levels and examine supply chain synchronization issues in more detail. Examples include port logistics, vehicle routing in hinterland transportation networks and inventory routing. Several techniques such as modelling and simulation are addressed to show how to tackle each of these decision problems and how to deal with uncertainty in the network. We discuss several important trends such as synchromodal transportation networks.

Assignment:
Two assignments should be made in between classes to show an understanding of the concepts discussed and apply it in small research projects.

Program

	Date	Lecturer	Topics	Assignment
Lecture 1	Sept 17	Van Woensel	Vehicle routing in hinterland networks	
Lecture 2	Oct 8	Vis, Buijs	Freight transportation and supply chain synchronization	Introduction research project
Lecture 3	Oct 20	Van Woensel	City logistics and inventory routing	
Lecture 4	Nov 26	Vis	Port logistics	Presentations research project

Course material

A set of academic papers including:

- Buijs, P., Carlo, H., Vis, I.F.A., Synchronizing local and network-wide cross-docking operations – a framework and classification, European Journal of Operational Research.
- Carlo, H.J., Vis, I.F.A., Roodbergen, K.J. Seaside Operations in Container Terminals: Literature Overview, Trends, and Research Directions, Flexible Services and Manufacturing Journal.
- Carlo, H.J., Vis, I.F.A., Roodbergen, K.J. Transport Operations in Container Terminals: Literature Overview, Trends, and Research Directions, European Journal of Operational Research 236, 1-13.
- Carlo, H.J., Vis, I.F.A., Roodbergen, K.J. (2014), Stacking Operations in Container Terminals: Literature Overview, Trends, and Research Directions, European Journal of Operational Research 235, 412-430.

Prerequisite

Master courses on Operations Research and Logistics.