201100005

Traffic Operations

Course info

Course module	201100005	**Starting block**	1B
Credits (ECTS)	7.5	**Application procedure**	You apply via OSIRIS Student
Course type	Course	**Registration using OSIRIS**	Yes
Language of instruction	English	**Number of insufficient tests**	-
Contact person	dr. T. Thomas		
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Lecturer(s)			
Lecturer	prof.dr.ir. E.C. van Berkum		
Lecturer	dr. T. Thomas		

Learning goals

Course objectives:
- Gain insight in the process of traffic flows and theories and models that describe this process
- Basic understanding of concepts of traffic flow theory and the statistical properties of traffic flows
- Gain insight in the measurement of traffic operations process, analyze and interpret traffic measurements

Content

Course Description

Background and context:
An important aspect of traffic engineering is the study of traffic operations, i.e. speed, density and flow, and in particular temporal and spatial variations and correlations. With this knowledge it is possible to manage the traffic system, i.e. influence traffic flows without actually changing the infrastructure. Based on the actual traffic situation travellers are informed or guided and several traffic control systems are implemented in order to obtain a safer, cleaner, faster, more reliable traffic system. Operations and Management 1 deals with the more theoretical concepts of traffic operations and their statistical properties.

Course content:
This course is about the description and measurement of traffic operations. The theory of traffic flows deals with basic variables as intensity, velocity and density and concepts as jam density, optimal velocity, capacity, car following behaviour and shock waves. Further the estimation of capacity and the monitoring and dynamic modelling of traffic operations, including the statistical properties of the several variables are studied.

Assumed previous knowledge

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PARTICIPATING STUDY

M-CEM

Required materials

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Recommended materials

Course material

Book: Kestin A. and M. Treiber (2012): Traffic Flow Dynamics: Data, Models and Simulation Springer (can be purchased as hardcopy or ebook through springer.com)
Reader no 840: “Statistic tools for data analysis in traffic engineering”

Handouts

Instructional modes

Instruction/lecture (Required)

Lecture (Required)

Project (Required)

Self study

Tests

Test