Zurich University of Applied Sciences

School of Engineering

t.TSY1 - Transport-Systeme 1

Person responsible for the course:	Albert Steiner, sine
Credits:	6
Valid for:	2010/2011
Last saved:	20.09.2010 09:24

Learning objectives:

The students

- know the meaning of the terms capacity, supply and demand within the field of transport and also know the relevant capacity bottlenecks
- know some central models and their application area
- have an overview on the applicability of modelling and simulation in the field of transport
- can assess what benefits in terms of removing capacity bottlenecks can be expected by modelling and simulation approaches
- know the most important data collection technologies and simulation tools
- know the most relevant modelling approaches together with some practical applications
- can practically apply the gained theoretical knowledge within the term paper
- have a solid basic knowledge of MATLAB
- can conduct, analyse and document basic simulation experiments

Course content:

- Overview of the current and future capacity bottlenecks in the field of transport
- Meaning and impact of modelling and simulation in the field of transport
- Basic terms and principles in the areas of modelling and simulation
- The overall process of modelling and simulation
- Classification of modelling approaches (with examples)
- Overview on simulation (simulation paradigms, tools)
- Data collection and communication technologies in transport
- Theory for traffic models together with practical applications
- Several presentations given by external transport experts to demonstrate the importance of modelling and simulation in practice

Previous knowledge:

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Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14*2
Tutorial/Practicum	14*2
Group teaching	14*2
Block instruction	
Seminar	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

Number	Type	Weighting
1	Term paper	75%
1	Presentation results of term paper	10%
1	Short report on MATLAB exercise	15%

Language of instruction:

Deutsch

Instruction material:

Lecture notes and slides

A literature list with references is part of the lecture notes.

Comments:

1 term paper (contents according to a separate document)

1 presentation ot the results of the term paper

1 documentation of an exercise with MATLAB