t.TSY1 - Transport Systems 1

Person responsible for the course:	Albert Steiner, sine
Credits:	6
Valid for:	2009/2010
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Learning objectives:

The students

- know some central models and their application area

- know the meaning of the terms capacity, supply and demand within the field of transport and also know the relevant capacity bottlenecks,

- have an overview of the applicability of modelling and simulation in the field of transport, also from various presentations of external experts,

- 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 apply the gained theoretical knowledge in 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 of 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	7,5
1	Presentation results of term paper	1
1	Short report on MATLAB exercise	1,5

Language of instruction:

Deutsch

Instruction material:

script "Transportsysteme 1" / Lecture notes "Transportsysteme 1" (in German)

ISBN Titel Autor(en) Verlag Auflage Ausgabejahr

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