

t.TSY1 - Transport-Systeme 1

Person responsible for the course: Raimond Matthias Wüst, wura

Credits: 6

Valid for: 2011/2012

Last saved: 31.12.2012 00:00

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:

-

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 with presentation	60% (Seminar thesis:: 50%, present. 10%)
1	Theory mid term exam	20%
1	Short report on MATLAB exercise	20%

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 of the results of the term paper

1 mid term exam (details will be provided at the beginning of the semester)

1 documentation of an exercise with MATLAB