

t.FST - Air Traffic Management Engineering

Person responsible for the course:	Heinz Wipf, td11
Credits:	4
Valid for:	2009/2010
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Learning objectives:

The students understand the basic principles of the following concepts and tools used in aviation:

- radio communication
- positioning
- navigation

Complete systems are dealt with using individual examples.

This module enables students to deepen their knowledge. They are competent to independently handle problems that may arise. The students acquire skills which will allow them to write term papers in combination with flight control.

Course content:

Sensors:

- terrestrial radio navigation
- direction finder, radar

Systems:

- satellite navigation systems (GPS, Galileo, SBAS/egnos/WAAS, GBAS/LAAS)
 - conventional aerial navigation systems (VOR, DME ILS, INS)
 - air traffic control systems (PSR, SSR, MLAT/WAM, ADS)
 - principles of positioning
 - communication systems
 - system reliability
 - practical exercises (interference scenarios)
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Previous knowledge:

- statistics / stochastic.
- basic knowledge of electrical engineering, electronic engineering and signal processing
- knowledge of selected topics of applied mathematics (Fourier-Transformation)

Participants are expected to have sufficient English language skills.

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	12*(2L+2L)
Tutorial/Practicum	
Group teaching	
Block instruction	2*(2L+2L)
Seminar	

Assessment:

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

Number	Type	Weighting
1	End of term exam	2
1	Exam during the semester	
1	Further assessments	1

Language of instruction:

German

Instruction material:

slides as PDF files

readers as PDF files

Mansfeld, Werner

Funkortungs- und Funknavigationsanlagen

ISBN 3778522027

Heidelberg: Hüthig, 1994

Pratap Misra and Per Enge

Global Positioning System: Signals, Measurements and Performance

ISBN 0-9709544-1-7

Ganga-Jamuna Press, 2006

Comments:

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