

t.FOP - Guidance, Location and Position

Person responsible for the course: Heinz Wipf, td11
Credits: 4
Valid for: 2009/2010
Last saved: 23.08.2010 20:48

Learning objectives:

The students

- understand the principles of positioning and guidance,
 - understand the principles of geodesy,
 - are able to apply the various procedures of navigation and location, in particular of radionavigation, at an elementary level and have the ability and skills to further expand the topic.
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Course content:

Geodesy and mathematical principles

- introduction to geodesy
- projections, coordinate transformations, spheric trigonometry
- the notion of time in navigation
- magnetism and compass
- positioning, location and guidance
- the notion of error and the magnitude of error in navigation
- reliability

Radioelectric principles

- phenomena of wave propagation,
- mathematical and physical interrelations,
- antennas,
- fault-free operations

JAR-FCL 061:

- BASICS OF NAVIGATION
 - MAGNETISM AND COMPASSES
 - CHARTS
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Previous knowledge:

mathematics: trigonometry, matrix algebra, analytical geometry, vector analysis

physics: electrodynamics, optics,

electrical engineering: principles of direct and alternating current

Teaching method:

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

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	75%
1	Exam during the semester	25%
	Further assessments	

Language of instruction:

German

Instruction material:

slides in PDF format

readers in PDF format

further literature

ISBN 3778522027

"Funkortungs- und Funknavigationsanlagen"

Mansfeld, Werner

Hüthig

Heidelberg 1994

Comments:

lecturers:

Prof Dr. A. Geiger dipl. Ing. ETH

Dr. M. Scaramuzza dipl. Ing. ETH

H. Wipf dipl. Ing. HTL