Zurich University of Applied Sciences

School of Engineering

t.ETEK2 - Electrical Engineering and Electronic Engineering 2

Person responsible for the course:	Martin Schlup, spma
Credits:	3
Valid for:	2009/2010
Last saved:	03.09.2010 08:49

Learning objectives:

At the end of this course students have an overview of the basic principles of Communications Engineering, with an emphasis on those theoretical and practical areas that are relevant in the field of aviation.

They have a basic knowledge of wireless communication on a physical level. In addition they also know the methodology.

Course content:

- signal characterisation in time and frequency range (periodic/unperiodic, continuous/digital and deterministic and stochastic signals;
- spectrum: Fourier series and Fourier transformation
- modulations: AM/FM, amplitude-, phase- and frequency keying
- modern transmitters and receiver concepts (IQ-Modulation/demodulation,mixer, LO, PLL)
- analogue transmission systems (frequency characteristics, digital filters)
- basics of transmission line theory (conductors, wave guides)
- radiochannel (propagation in air, multichannel, antenna systems)

Previous knowledge:

Mathematics:
Functions (logarithm, exponential functions, trigonometrical functions), analysis (differential and integral calculus, complex numbers)

Electricity:
Fundamental laws of electricity (Resistance, Capacity, Inductance), AC with vectors

Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x2L
Tutorial/Practicum	7x4L
Group teaching	
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	End of term exam	0.6
1	Exam during the semester	0.2 / Test
	Further assessments	

Language of instruction:

German

Instruction material:

Kursablauf und -beschreibung, sowie Unterlagen zu Theorie, Uebungen und Praktika sind auf der Homepage spma zu finden unter ETEK2:

https://home.zhaw.ch/~spma/Scripts/AV/ETEK2/

Die folgenden Werke sind für den Unterricht nicht notwendig.

-3-528-03931-0 Grundlagen der Informationstechnik, Signale, Systeme und Filter Martin Meyer Vieweg 2002

-82-8107-058-7 Aviation Training Systems: Aircraft General Knowledge, Electrics Nordian AS 2005

-3-528-13865-3 Kommunikationstechnik, Konzepte der modernen Nachrichtenübertragung Martin Meyer Vieweg 2002

-1-904935-02-8 Aircraft General Knowledge 2, Book3: Electrics & Electronics Oxford Aviation Training 2005

Comments:

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