EE-525 **HF and VHF circuits and techniques II**

Dehollain Catherine

Cursus	Sem.	Type
Electrical and Electronical Engineering	MA2, MA4	Opt.

Language of teaching	English
Credits	2
Session	Summer
Semester	Spring
Exam	Oral
Workload	60h
Weeks	14
Hours	**2 weekly**
Lecture	2 weekly
Number of positions	

Summary

Master the design of circuits and systems at high frequency (HF) and very high frequency (VHF) (1 MHz-6GHz). This lecture is particularly oriented towards circuit aspects of modern communications systems

Content

1) HF PowerAmplifiers
2) Mixers
3) Oscillators
4) Frequency Synthesizers
5) Modulators and Demodulators (Circuit aspects)
6) Transceivers Architecture
7) Spread-Spectrum Techniques
8) Aspects of Mobile Communications Systems: the GSM

Keywords

Radio frequency wireless communication circuits
HF and VHF wireless communication circuits

Learning Prerequisites

Recommended courses

HF and VHF circuits and techniques I

Learning Outcomes

By the end of the course, the student must be able to:

- Design an amplifier
- Design an oscillator
- Assess / Evaluate the stability of an amplifier
- Assess / Evaluate the architecture of a receiver
- Assess / Evaluate the architecture of a transmitter
- Assess / Evaluate the topology of an oscillator
- Assess / Evaluate the topology of an amplifier
- Assess / Evaluate the impedance matching circuits at the input/output of an amplifier

Transversal skills

- Access and evaluate appropriate sources of information.
- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Manage priorities.
- Set objectives and design an action plan to reach those objectives.
- Communicate effectively, being understood, including across different languages and cultures.
- Use both general and domain specific IT resources and tools
- Use a work methodology appropriate to the task.

Teaching methods

Ex cathedra and exercises

Expected student activities

To follow the courses and to do the exercises.

Assessment methods

Ex-cathedra course

Supervision

Office hours	Yes
Assistants	Yes
Forum	No

Resources

Notes/Handbook

Polycopies and scientific articles.

Websites

- http://rfic.epfl.ch