

Télécommunications

SEC

AIMS

OBJECTIFS:

The first goal of this optionnal course is to get into basic principles to understand and design modern communication systems. We also want to give an overview of present and future telecommunications technologies

Presented in a clear , pedagogical and practical way all concepts, knowledge and methods necessary for an introduction to communication networks.

CONTENT

- Coding and modulation techniques used for digital signal transmission
- Theorie and technics for modern communication systems
- GSM and UMTS networks & architecture
- WaveLan technologies
- Propagation and system planning
- Radio channel : characteristics, flat fading, multipath propagation
- Radio system engineering : design of cellular systems

Part 1: Basic concepts in communications networks

Definition and objectives of networks, types of networks

Internet

Data carried by the network transmission media

Transmission techniques

OSI protocols and architecture

Ethernet LANs

TCP / IP

IP routing

Part 2: Design and Building the corporate network

Cabling system

Implementation of LAN

VLAN

Network architecture

Interconnection sites

WAN

Sizing WAN links

Part 3: Extensions

SCADA

IP telephony

BIBLIOGRAPHY

R. Gilmore, L. Besser : Practical RF circuit design for modern wireless systems, vol. 2 Ed.

Artech House, 2003, 569 p

T.S. Rapport : Wireless communications : principle and practice, Ed. Prentice Hall, 1996, 641 p

G. Baudoin : Radiocommunications numériques : Tome 1, Principes, modélisation et simulation,

Ed. Dunod Édition - Collection : Technique et ingénierie, 644 p

Réseaux d'entreprise par la pratique par M. JEAN LUC MONTAGNIER aux Editions EYROLLES

PRE-REQUISITE

GE-3-TC1

GE-4-TC2

IDENTIFICATION	
CODE :	GE-5-S1-EC-SEC
ECTS :	12.0

HOURS	
Lectures :	140.0 h
Seminars :	80.0 h
Laboratory :	80.0 h
Project :	30.0 h
Teacher-student contact :	330.0 h
Personal work :	100.0 h
Total :	430.0 h

ASSESSMENT METHOD	
1 x 2h	
One hour examination with MCQ	

TEACHING AIDS	
On line ppt files	
Course materials provided by the teacher	

TEACHING LANGUAGE	
French	

CONTACT	
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