

Course Unit Description - (CINEM)

(Industrial and Enterprise Communications)

(Mestrado em Engenharia Electrotécnica e de Computadores)

Academic year: 2009/2010



Subject group: Electrónica e Telecomunicações

	Semestral	Compulsory		
Mode of study	Diurno	Hours/Week	T-Teórica	2
Year	1 ^o		PL-Prática-Laboratorial	2
Semester	1 ^o		OT-Orientação Tutorial	1
ECTS				6

Objectives

To acquire knowledge in a large set of communications technologies used in industrial and enterprise networks.

Course Contents

Local Networks
transmission medium and technologies
-- Ethernet networks (IEEE 802.3).
-- Wireless networks
- Wi-Fi (IEEE 802.11)
- Bluetooth (IEEE 802.15)
- WIMAX (IEEE 802.16)
Network interconnection.
The TCP/IP protocol stack (IP, TCP, UDP, ICMP, ARP).
Networks services (DNS, DHCP, SMTP, POP, IMAP, HTTP).
Interconnection equipment.
Public Access networks and technologies.
Information Systems.
Internet Services.
Voice services (conventional and VoIP).
Access networks: xDSL e FWA (Fixed Wireless Access).
Mobile networks (GSM e UMTS).
VPNs, P2P and Multimedia Communications

Recommended reading

Communication Systems and Networks, Ray Horak, Harry Newton, Mark A. Miller, Wiley, (3^a Ed., 2002)
Computer Networks, Andrew Tanenbaum, Prentice-Hall (4^a Ed., 2003)
Data and Computer Communications, William Stallings, Prentice-Hall (7^a Ed., 2004)
Designing the Total Area Network: Intranets, VPNs and Enterprise Networks Explained, Mark Norris, Steve Pretty, John Wiley & Sons (February 16, 2000)
GSM & UMTS: The Creation of Global Mobile Communications, Friedhelm Hillebrand, Wiley & Sons, (2002)
Internetworking with TCP/IP, Vol. 1: Principles, Protocols and Architectures, Douglas Comer, Prentice Hall (5^a Ed., 2005)
Practical Industrial Data Networks: Design, Installation and Troubleshooting, Steve MacKay, Edwin Wright, Deon Reynders, John Park, Neyes (1.^a Ed., 2004)
TCP/IP Illustrated: The Protocols, Richard Stevens, Prentice-Hall
TCP/IP Network Administration, Craig Hunt, O'Reilly, (3^a Ed., 2000)

Teaching Methods

Expositive classes.
Demonstration sessions.
Practical work.

Assessment methods

$NF = 0.625 * PE + 0.375 * Freq$

	Name
Teacher responsible:	João Miguel Queiros Magno Leitão (JML)
Lecturer:	João Miguel Queiros Magno Leitão (JML) Carlos José Ribeiro Campos (CRC)

