UCL Université catholique de Louvain

LELEC2920

2010-2011

Communication networks

5.0 credits	30.0 h + 30.0 h	1q

Teacher(s) :	Macq Benoît ; Lugan Sébastien (compensates Macq Benoît) ;
Language :	Anglais
Place of the course	Louvain-la-Neuve
Main themes :	Identical to the contents of the course
Aims :	At the end of this course, the students will be able - to understand several communication network architectures including those deployed for mobile network, IP Next Generation and ATM Networks, - to carry out the dimensioning of the networks starting from concepts of traffic, - to design networks which guarantee a quality of service, more precisely the quality of service of multimedia commulnications - to conceive architectures ensuring the security of the communications *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	The course describes initially the concepts of routed and switched networks and directly gives examples from the ATM networks, IP, ISDN (and Frame Relay). One describes then the local area networks and the methods of access to a physical media (MAC), with a particular accent on the Ethernet networks and an introduction to the industrial netoworks. The network architectures for mobile and wired networks are developped. The concepts of traffic for different types of sources and of function of utility and the related traffic management strategies are then studied. The security management of a network on the basis of use of cryptography and the security tools (Ipv6, PKI, Firewalls) is developed. The security policy of a network is also approached The course includes three parts, namely part of oral talk supplemented by documents of e-learning, evaluated within the framework of an oral examination, part of laboratory based on the use of a network simulator evaluated on the basis of a technical report and a work on an advanced question of network architecture to be delivered in the form of a WEB document.
Other infos :	References : S. Keshav, An engineering approach to networking, Addison Wesley G. Pujolle, Les Réseaux, Eyrolless Could be given in English
Cycle and year of study :	> Master [120] in Electrical Engineering > Master [120] in Electro-mechanical Engineering
Faculty or entity in charge:	ELEC