



2EL6110 – Advanced computer networks

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Department: CAMPUS DE RENNES
Language of instruction: FRANCAIS
Campus: CAMPUS DE RENNES
Workload (HEE): 60
On-site hours (HPE): 35,00
Elective Category : Engineering Sciences
Advanced level : Yes

Description

This elective course is part of the InfoSec Track, but is accessible to any 2nd year student validating the prerequisites. It aims to present advanced concepts of Computer Networks architecture and is based on the fundamental concepts presented in the elective course "Network and Security " of 1st year.

The classic paradigms of Computer Networks related to the creation of Internet (layered models, TCP/IP protocols, client/server model, etc.) have become widely adopted. However, changes in user needs in terms of data availability and volumetrics as well as the emergence of new applications and new services (support of "heavy" applications as Wep Apps, Cloud Computing, cryptocurrency, etc.) lead to significant changes in traditional architectures of Information Systems. These architectural evolutions, as well as the rise of associated technologies, can also be explained by two current trends:

- The outsourcing of network and hosting infrastructures, and even of applications themselves;
- The optimisation of the use of these infrastructures.

This implies in particular:

- Dynamic, on-demand adaptation capabilities, including the ability to distribute storage and processing but also to quickly reconfigure infrastructures;
- Resource sharing capabilities (compute, storage and network), generally based on the virtualization of infrastructures;
- The use of decentralized, peer-to-peer models;
- Scalable resource allocation models, etc.

Quarter number

SG6