

IDENTIFICATION

Course code : SR601
ECTS : 2

DURATION

Lectures : 4
Tutorial classes : 18
Labs : 14
Total : 36

Project :
Personnal work :

ASSESSMENT

At least two continuous assessments and one lab report.

TEACHING MATERIALS

Slides, directed work sheets, and practical work sheets.

LANGUAGE

English

CONTACT

Joël GROUFFAUD
joel.grouffaud@univ-reunion.fr

Modifié le : 14 juillet 2026

UE : UE6-SYSRES

COURSE : Computer Networks : Switching and Routing

SCOPE OF THE COURSE

OBJECTIVES

This course will enable students to understand enterprise LAN technologies in order to manage and/or design a secure, robust, and high-performance communication infrastructure for a company, as well as to know, implement, and evaluate the main internal routing protocols.

COMPETENCE AND SKILLS

- Implement, from design to production, a company's computer network while integrating QoS and security issues.
- Produce and manage documentation for a computer infrastructure

PROGRAM

- Functions of enterprise local area networks (LAN).
- IEEE standards, protocols, and media access methods.
- Enterprise network topology, cabling plan, hardware components.
- Switched Ethernet, Spanning Tree, VLANs and inter-VLAN routing, Layer 3 switches.
- Quality of Service (QoS)
- LAN security
- High-speed technologies : Fibre Channel and Ethernet evolutions.
- Hierarchical routing and Internet architecture : autonomous systems.
- IPv4 address translation (NAT).
- Intra-domain routing : OSPF.
- Layer 3 redundancy : HSRP

BIBLIOGRAPHY

- Danièle DROMARD and Dominique SERET - *Network Architecture : Course Summary and Corrected Exercises* - Synthex Collection - Pearson Education
- James F. KUROSE and Keith W. ROSS - *Computer Networking* - Pearson

REQUIREMENTS

- SYSRES 501 : Computer Networks : Fundamental Concepts
- SR502 : System Administration : Concepts, Tools, and Services