

IDENTIFICATION

Course code : ESI-SPI-CI-IN4-S7-UE1-EC4
ECTS : 1

DURATION

Lectures :	4
Tutorial classes :	10
Labs :	6
Total :	20

Project :
Personnal work :

ASSESSMENT

At least two continuous assessments.

TEACHING MATERIALS

Slides, directed work sheets, and practical work sheets.

LANGUAGE

English

CONTACT

This course will enable students to understand local area network technologies in order to manage and/or design a company's communication infrastructure, and to know, implement, and evaluate the main routing protocols to create a multi site infrastructure using an operator network's

modèle le : 14 juillet 2026

UE : UE7-SYSRES

COURSE : Interconnection of Networks : Theories and Protocols

SCOPE OF THE COURSE

OBJECTIVES

COMPETENCE AND SKILLS

— Design a multi-site connection via an operator network

PROGRAM

- Inter-domain routing : BGP.
- Route announcement principles, eBGP and iBGP duality. Internal routing/external routing synchronization and route redistribution.
- Internet Exchange Points (GIX), transit, and peering.
- Traffic engineering in the Internet. BGP traffic analysis, study of BGP announcement oscillations. Internet connectivity analysis, principles of metrology. Active and passive measurement tools.
- Label switching : MPLS.
- VRFs and MPLS/BGP VPNs.

BIBLIOGRAPHY

James F. KUROSE and Keith W. ROSS - Computer Networking - Pearson Editions

REQUIREMENTS

Systems and Networks modules and Cybersecurity from previous semesters.