

Introduction to networks



Component
École Nationale
Supérieure
d'Électrotechnique
d'Électronique

In brief

- **Ametys Code:** MHAR363Q
- **Open to exchange students:** Yes

Presentation

Objectives

The aim of this course is to provide a solid understanding of the fundamental principles of computer networking, with an emphasis on local area networks (LANs) and Internet communication protocols. Through a theoretical and practical approach, students will learn how data is exchanged within a network, how devices interact, and how different protocol layers work together to ensure reliable and efficient communication.

Description

Upon completion of this course, students will be able to:

- Understand the different methods of accessing shared media (e.g., ALOHA, CSMA, Token Ring).
- Identify and analyze data link layer protocols (Ethernet, Wi-Fi).
- Understand the operating mechanisms of the Internet: IP addressing, routing, fragmentation, transport protocols (TCP/UDP), application services (DNS, HTTP).
- Configure and troubleshoot a simple network using practical tools (Wireshark, virtual routers, etc.).

- Compare and simulate different types of multiple access. This course combines theory (lectures/tutorials) and practical application (labs) to consolidate knowledge and develop operational skills.