# Stochastic Processes/Queueing Systems : Modeling and Algorithms

**ECTS**
4 crédits

**Composante**
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# Présentation

## Description

**Goal** : To provide the key concepts in terms of network planning and interoperability for service provision in the Internet context.

**List of subjects to be presented to the students :**

# Basic queueing theory.
# Markov Processes and Markov Chains
# Birth-Death Processes
# Equilibrium Solutions for M/M/-/- Queues
# Analysis of the M/G/1 queue
    - Priorities in a M/G/1
# Network of queues
# Queueing theory in practice: traffic descriptors, delay and rate guarantees
# Network optimization
    - The shortest path problem
        # The Dijkstra Algorithm
        # The Ford Algorithm
        # The Floyd Algorithm
    - Flow optimization
        # The maximum flow problem
        # The Ford-Fulkerson Algorithm
        # The minimum-cost maximum-flow problem