

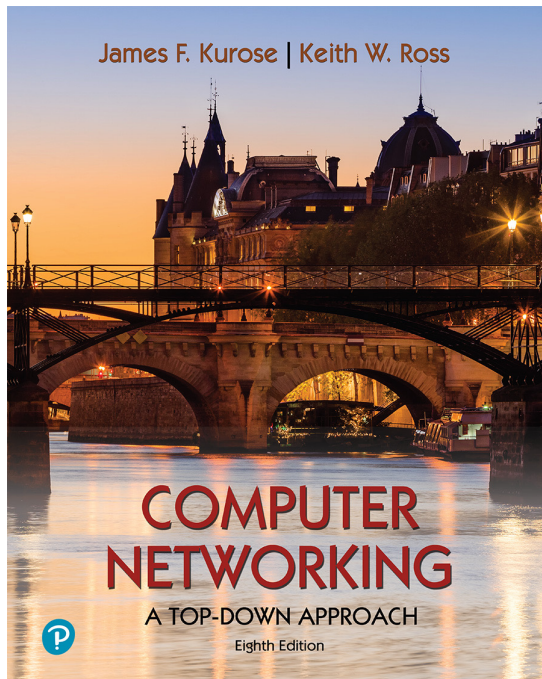
# Réseaux, information et communications

## INFO-F-303

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# Reference Book



*Computer Networking:  
A Top-Down Approach,  
8<sup>th</sup> edition.*

Jim Kurose, Keith Ross  
Pearson, 2020

(earlier editions are also valid for this course)

Many of the slides from all the chapters are adapted from the slides provided with the book: All material copyright 1996-2020, J.F Kurose and K.W. Ross, All Rights Reserved.

Some figures also come from:  
Computer Networks - 4<sup>th</sup> or 5<sup>th</sup> edition, Andrew S. Tanenbaum, Prentice-Hall International, 2003 or 2011

# Content of the Networking Part

## Chapter 1: Computer Networks and the Internet

- An overview

## Chapter 2: Application Layer

- Web and HTTP, DNS, socket interface

## Chapter 3: Transport Layer

- Error/flow/congestion control, TCP, UDP

## Chapter 4: Network Layer – The data plane

- IP, addressing, packet forwarding, router architecture

## Chapter 5: Network Layer – The control plane

- Routing protocols

## Chapter 6: Link Layer and Local Area Networks

- Error detection, switches, LANs, Ethernet

# Practice

## 6 Netkit labs

- Netkit is a **network emulator**: it allows to set up a network and perform experiments, with virtual network equipments that feature characteristics similar to real equipments
- Very useful to understand some concepts in a more practical setting
- Each lab lasts 2 hours
- Groups of 2 students
- With **short report** and **grading** at the end of labs 2 to 6
- Attendance is **mandatory**
- See [www.netkit.org](http://www.netkit.org)
  - do not install Kathará as suggested when you follow this link, not needed for this course

### □ Teaching assistants:

- ❖ Hugo Callebaut and Simon Renard

# Planning for the networking part

## □ Theoretical lectures:

- ❖ Every Thursday from 14:00 to 16:00 (12 lectures)
- ❖ 3 additional lectures on Fridays (22/9, 29/9, 13/10)
- ❖ Podcasting will be provided

## □ Netkit labs:

- ❖ On weeks 7, 10, 11, 12, 13, 14

# Evaluation

## □ Networking part

### ❖ Labs:

- Weight of 20%
- In September, not taken into account if detrimental to students (provided that the labs were actually done)

### ❖ Written exam:

- Weight of 55% (or 75% in Sept. if labs not taken into account)
- Duration: 2h
- See examples on the UV

## □ Information theory part

### ❖ Weight = 25%

### ❖ Details provided by Christophe Petit