Advanced Networking

Course Introduction

Antonio Carzaniga

Faculty of Informatics
Università della Svizzera italiana

February 21, 2022

Outline

- General course information
- Program
- Preliminary schedule
- A preview of *Advanced Networking*

General Information

- On-line course information
  - on iCorsi
  - and on my web page: ***https://www.inf.usi.ch/carzaniga/edu/adv-ntw/***

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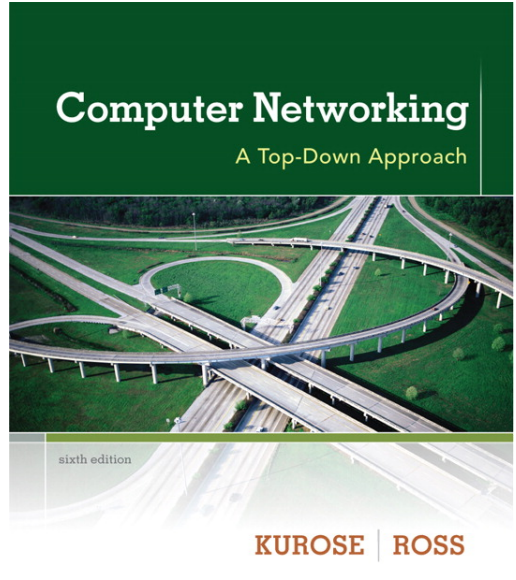
- Office hours
  - Antonio Carzaniga: *by appointment*
  - Ali Fattaholmanan: *by appointment*

Textbooks (1)

Computer Networking
A Top-Down Approach

James F. Kurose
Keith W. Ross

Addison-Wesley



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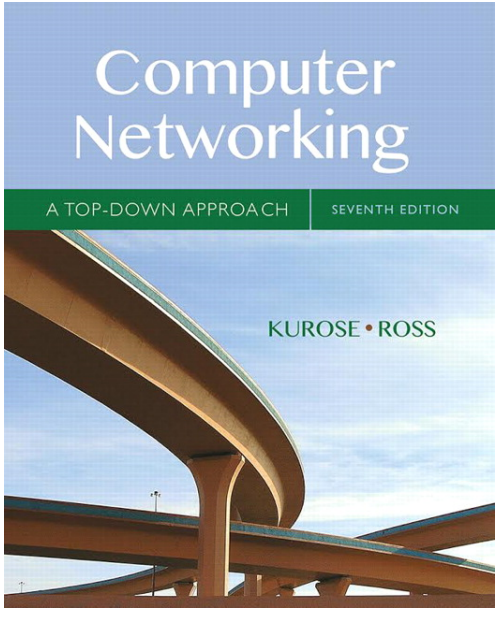

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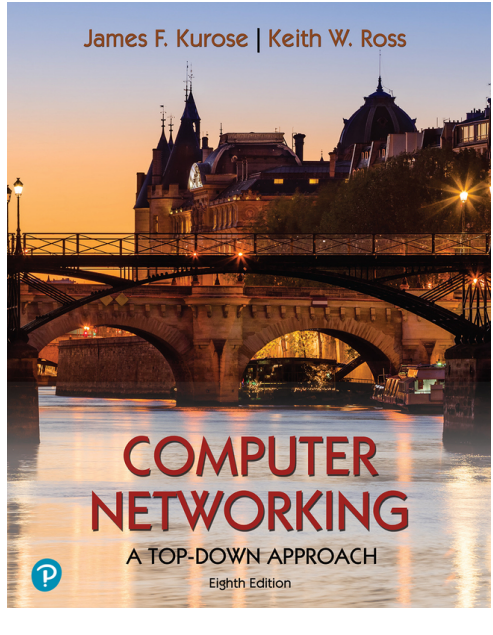
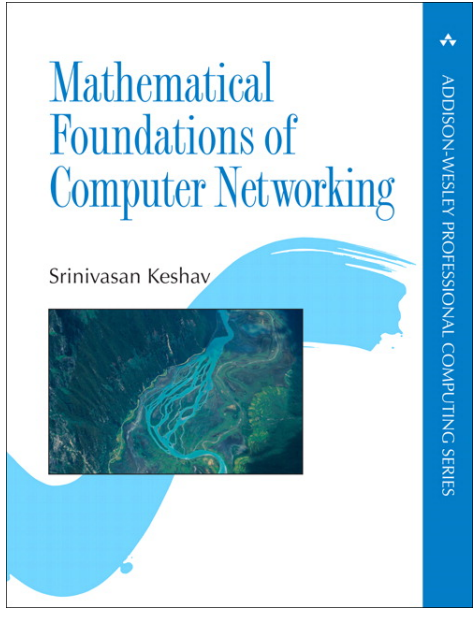


Textbooks (2)

Mathematical Foundations of Computer Networking

Srinivasan Keshav

Addison-Wesley Professional



Evaluation

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- +70% homework assignments and projects
- +30% paper presentations
- ±10% instructor's discretionary evaluation
  - participation
  - extra credits
  - trajectory
  - …

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ALWAYS properly acknowledge your sources!

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- Using someone else's material may be appropriate
  - e.g., software libraries
  - ***always clearly identify the external material, and acknowledge its source; failing to do so means committing plagiarism.***
  - the work will be evaluated based on its *added value*

Plagiarism

- Committing plagiarism on an assignment or an exam will result in ***failing that assignment or that exam***
- Penalties may be escalated in accordance with the regulations of the Faculty of Informatics

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  - corollary: the grade of an assignment turned in more than two days late is 0

What this course is about

(***What*** and ***How***)

How Are We Going To Learn?

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- Problem solving
  1. I give you a problem, which we discuss together
  2. You solve it on your own without any directions
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  4. I present my solution
  5. We generalize and study the theory

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- The Feynman* technique (sort-of)
  - The best way to learn a concept is to *teach it!*
  - Seminars on topics of your choice, possibly including the topics of the course
  - We all discuss, but the point is that ***you are the teacher!***

---

* Richard Feynman, theoretical physicist, great teacher, genius, amazing human being!

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- Network modeling and simulation
  - Packet-level modeling and simulation

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- Programmable Networks
  - SDN: programming the control plane: the OpenFlow interface. Programmable data plane: P4.