



TCP/IP Networking

Pavlos Nikolopoulos (NAL)
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Your Team

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Whom is this course for?

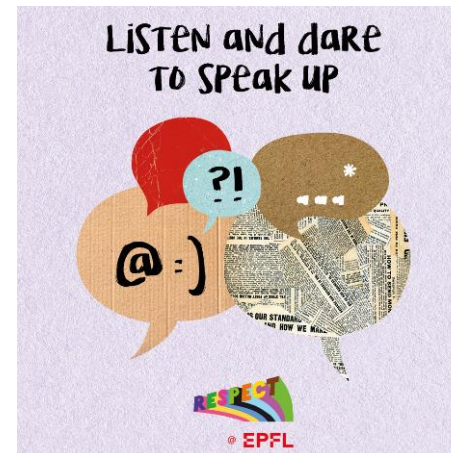
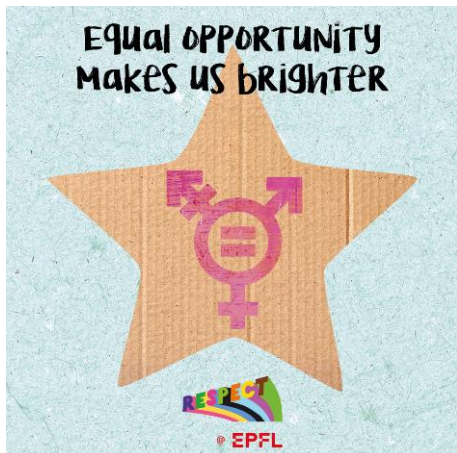
Whoever wants to learn what is under Internet's hood

Requirements

Experience with using one programming language (e.g Python)

We will practice with computers in a virtual environment – expect to spend time with the VM

No prior knowledge of computer networks required, but useful (it will save you time)



<https://go.epfl.ch/safespace>

What to expect

No difficult concepts, but *too* many of them and *too* many details

We will focus on details when and if the need arises

- cover the breadth of all fundamental concepts during lectures
- go in depth through a few carefully selected labs

What, Why, How

We will always focus on:

Why was some stuff invented, what problem it solves?

What does it do?

before asking:

How does it do its job?

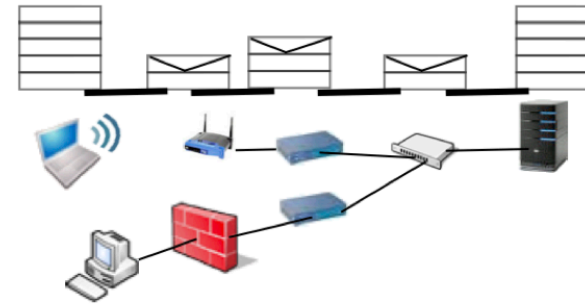
The why and what are short.

“How” is long but can be guessed once we get the “why” and “what”

Useful textbooks

Computer Networking

Principles
Protocols
and
Practice



Computer Networking : Principles, Protocols and Practice

Release 0.25

An earlier edition
also works

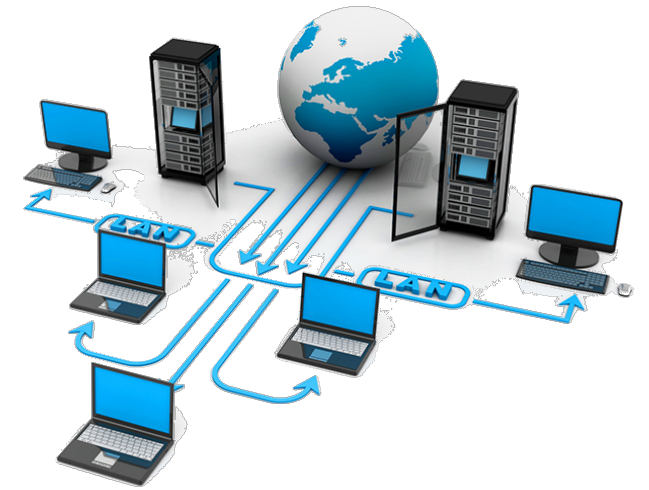


Computer Networking: A Top-Down Approach 8th edition

Jim Kurose, Keith Ross
Authors' website

Labs

- 7 in total (2 weeks each)
- *mandatory* and *graded*
- can be done entirely in your machine—no need for physical presence at EPFL—requires ~7GB of HD
- you can work in groups but every one must submit an individual report (online)
- some labs have a *bonus* research exercise, NOT mandatory, but interesting if you are motivated
- submit your answers to Moodle:
each lab is split in 3-4 *Lab Quizzes*,
multiple submissions are allowed until the deadline,
feedback only after deadline has passed
- all info in Moodle



Lecture Quizzes

- Online (Moodle) **Lecture Quizzes** every week (available after the lecture).
- Try them after attending lecture and before doing lab.
- Completion is mandatory; declared completed if you achieve $\geq 70\%$ grade (grade otherwise does not count). You can try as many times as you want – observe received feedback.
- Must take quizzes in sequential order
- Must be up to date with your lecture quizzes before submitting lab quizzes
- Enforced by Moodle

Your work every week

- Attend lecture (Thursdays 12:15-14:00 PO 01)
- Take the online lecture quiz (Moodle)
- Advance / Complete lab
 - Lab sessions with assistants
 - Fridays 11:00-13:00 INM200
 - Fridays 13:15-15:00 INM202
- Ed forum is attended *only* during working hours
Moodle forum will **NOT** be attended

Final Exam

One final exam in written form:

- on site, closed book
- exam “cheatsheet” will be available
- no computer

Grading

Final exam T

Lab grade

L_i = grade at lab i in scaled 1-6

$$L_{avg} = \frac{L_0 + \dots + L_5 + 0.5L_6}{6.5} \quad (\text{lab6 counts with weight} = 0.5)$$

RE_{avg} = average of all bonuses (max bonus = 0.5 on scale 1-6)

$$L = \min(6, L_{avg} + RE_{avg})$$

Overall grade $G = \frac{T + L}{2}$

Credits and other details

- Lectures are built on lectures from Prof. Jean-Yves Le Boudec, but they are modified and new things are added
- Voice recordings every week (but better to be present in person)
- Slides may be heavy at times, they are only meant to help you study at home
- Past final exams are useful, but not necessarily a guideline,
exam questions will be based on material from lectures and labs