S-38.188
Computer Networks (3 cr)
Spring 2004

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Networking Laboratory

General information

- Mandatory subscribtion through TOPI

  `https://webtopi1.hut.fi`

- Course homepage

  `http://www.netlab.hut.fi/opetus/s38188/2004dipoli`

- Personnel:
  - Lectures:
    - Pasi Lassila (e-mail: **`pasi.lassila@hut.fi`**)
    - Jouni Karvo (e-mail: **`jouni.karvo@hut.fi`**)
  - Exercises: Eeva Nyberg (e-mail: **`eeva.nyberg@hut.fi`**)

Course material

- Course book:
    - Larry. L. Peterson and Bruce S. Davie, "Computer Networks: A Systems Approach", 2nd edition, Morgan Kaufman Publishers, San Fransisco, USA, 2000, 748 p.
    - price: £31.95 (Amazon UK), main building's book shop may also have it
    - 1st ed. is basically OK, but course requirements based on 2nd ed.
    - updated 3rd ed. is also out now, but course is still based on 2nd ed.

- Other material
    - lecture slides delivered as a compendium via Edita
    - lectures also available **electronically** (via the web pages)
    - NOTE ! Printing the material on the university's printers is strickly forbidden!

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Lectures & assignments

- **Lectures** (2 hours/week):
    - On Mondays, at 17 - 20 in "Käpysali" (5 times)
        - Lecture weeks: 4, 6, 8, 10, 12 (March 15)
        - Lectures are given in Finnish
        - slides in English

- **Homeworks**
    - Mandatory!
    - Consists of three parts
    - Done in pairs (pair can not be changed during course)
    - **NOTE!** Last year's (or earlier) homeworks are not accepted any more
    - Follows the schedule of the regular day course
    - Make sure you have a working userid on EE department's work stations!

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Homework schedule

- Homework, part 1
  - will appear Thu, February 5
  - must be returned by Wed, March 10
  - delay measurements over Internet, TCP simulation on paper

- Homework, part 2
  - will appear Thu, March 4
  - must be returned by Wed, March 24
  - "guided tour" of ns2 simulation tool featuring TCP congestion control

- Homework, part 3
  - will appear Thu, March 11
  - must be returned by Wed, April 28
  - independent ns2 work on TCP congestion control

Exercise classes

- To be used as "question hours" for doing the homeworks
  - on Wednesdays at 17 – 19 (at HUT, but room to be decided)
  - day course has more classes, you are free to use them, as well (see web page of day course for details)

- Part 1:
  - Wed, March 3 (week 10), at 17-19, place ?

- Part 2:
  - Wed, March 17 (week 12), at 17-19, place ?

- Part 3:
  - Wed, March 31 (week 14), at 17-19, place ?
  - Wed, April 21 (week 17), at 17-19, place ?

Course completion

- To complete the course, you **must**
  - Pass the exam
    - 1st exam to be decided (organized at Dipoli)
    - + two retrial examinations (Sep/Oct 2003, Dec/Jan 2004)
  - **and** make the homeworks

- Grading based both on exam and homeworks

Schedule

L1	Introduction
L1	Link layer review and LAN technologies
L1	Interconnecting nets – Internet
L2	Routing in Internet
L2	IPv6 and Multicast
L3	Transport layer in Internet (UDP, TCP,…)
L3	TCP congestion control
L4	Name service (DNS)
L4	Applications (non-realtime and realtime)
L4	QoS in Internet (IntServ, DiffServ)
L5	Security
L5	Mobility (Mobile IP, ad hoc nets, WLAN hot spots)
L5	Network management (SNMP)