General information

- Mandatory subscription through TOPI
  
  https://webtopi1.hut.fi

- Course homepage
  

- Personnel:
  - Lectures: Pasi Lassila (e-mail: pasi.lassila@hut.fi)
  - Exercises: Eeva Nyberg (e-mail: eeva.nyberg@hut.fi)
Course material

• Course book:
  – 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.

• Other material
  – lecture slides delivered as a compendium via Edita
  – lectures also available electronically (via the web pages)


  – at the bottom of the home page
  – NOTE ! Printing the material on the university’s printers is strictly forbidden!

Lectures & assignments

• Lectures (2 hours/week):
  – On Mondays between 14 - 16 in hall S1 (12 - 13 times)
    • First lecture: January 14, last lecture: April 15
  – Lectures are given in Finnish
    • slides in English

• Homework
  – Mandatory!
  – Consists of two parts:
    • Pre-assignments
    • Project work
  – Last year’s (or earlier) homeworks are not accepted any more
Exercises and project work

- Pre-assignments
  - will appear Thu, February 6
  - must be returned by Thu, February 27
  - pre-assignments on related topics with the project work

- Project work
  - will appear Thu, February 20
  - must be returned by thu, April 24
  - can be returned only if home exercises have been successfully completed
  - project work deals with TCP and congestion control and is done by using ns2 simulation tool

Exercise classes

- To be used as “question hours” for doing the pre-assignments and the project work

- 3 for pre-assignments:
  - Wed, February 12 (week 7), at 12-14, hall S2
  - Wed, February 19 (week 8), at 12-14, hall S2
  - Wed, February 26 (week 9), at 12-14, hall S2

- 3 for project work:
  - Wed, March 19 (week 12), at 12-14, hall S2
  - Wed, March 26 (week 13), at 12-14, hall S2
  - Wed, April 2 (week 14), at 12-14, hall S2
Course completion

- To complete the course, you **must**
  - Pass the exam
    - 1st exam on Thu, May 8, at 16 - 19, in halls S2 and S4
    - + two retrial examinations (September 2003, January 2004)
  - **and** make the home assignments
  - **and** make the project work

- Grading based both on exam and project work (weighted sum)

Course overview

- The course S-38.188 Computer Networks is intended
  - for under graduates and
  - as a first course in computer networking technologies
  - Note! The course is equivalent to CS department’s course T-110.350

- The course assumes familiarity with
  - Layer 1 and 2 issues: encoding, framing, MAC protocols, LANs,....
  - don’t worry, these topics will be reviewed, though!

- This course is (mostly) about the Internet
  - the course covers in depth layers 3 and up of the Internet
  - the IP protocol
  - routing
  - transport protocols: UDP, TCP,....
  - traffic management aspects, QoS
  - applications, security
Planned contents

1. Introduction
2. Layer 2 (link layer) functions (overview)
3. General switching technologies
4. Internet basics
5. Routing in the Internet
6. IPv6, Mobile IP & Multicasting
7. UDP + reliable transfer in Internet (TCP)
8. TCP congestion control
9. Realtime services and multimedia
10. QoS in Internet
11. Applications (DNS, ...)
12. Internet security