S-38.188
Computer Networks (3 cr)
Spring 2004

Pasi Lassila, Jouni Karvo & Eeva Nyberg

Networking Laboratory

General information

• Mandatory subscription 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:**
  - 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 strictly forbidden!

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!
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

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