HELSINKI UNIVERSITY OF TECHNOLOGY
Networking laboratory

S-38.145
Introduction to Teletraffic Theory (2 cr)
Spring 2005

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http://www.netlab.hut.fi/opetus/s38145/

General information

- Spring 2005 course given both in Finnish and in English
- **Personnel**:
  - Lectures:
    - *Samuli Aalto*, **samuli.aalto@tkk.fi**
    - *Aleksi Penttinen*, **aleksi.penttinen@tkk.fi**
  - Exercises:
    - *Riikka Susitaival*, **riikka.susitaival@tkk.fi**
    - *Henri Koskinen*, **henri.koskinen@tkk.fi**
- **Course material**:
  - lectures delivered as a **compendium via Edita**
    - use course code **S-38.146 in WWW-TOPI** to get the **English version**!
  - lectures and exercises available **on the web**
  - print the material using your own printer, but **not** the university's printers

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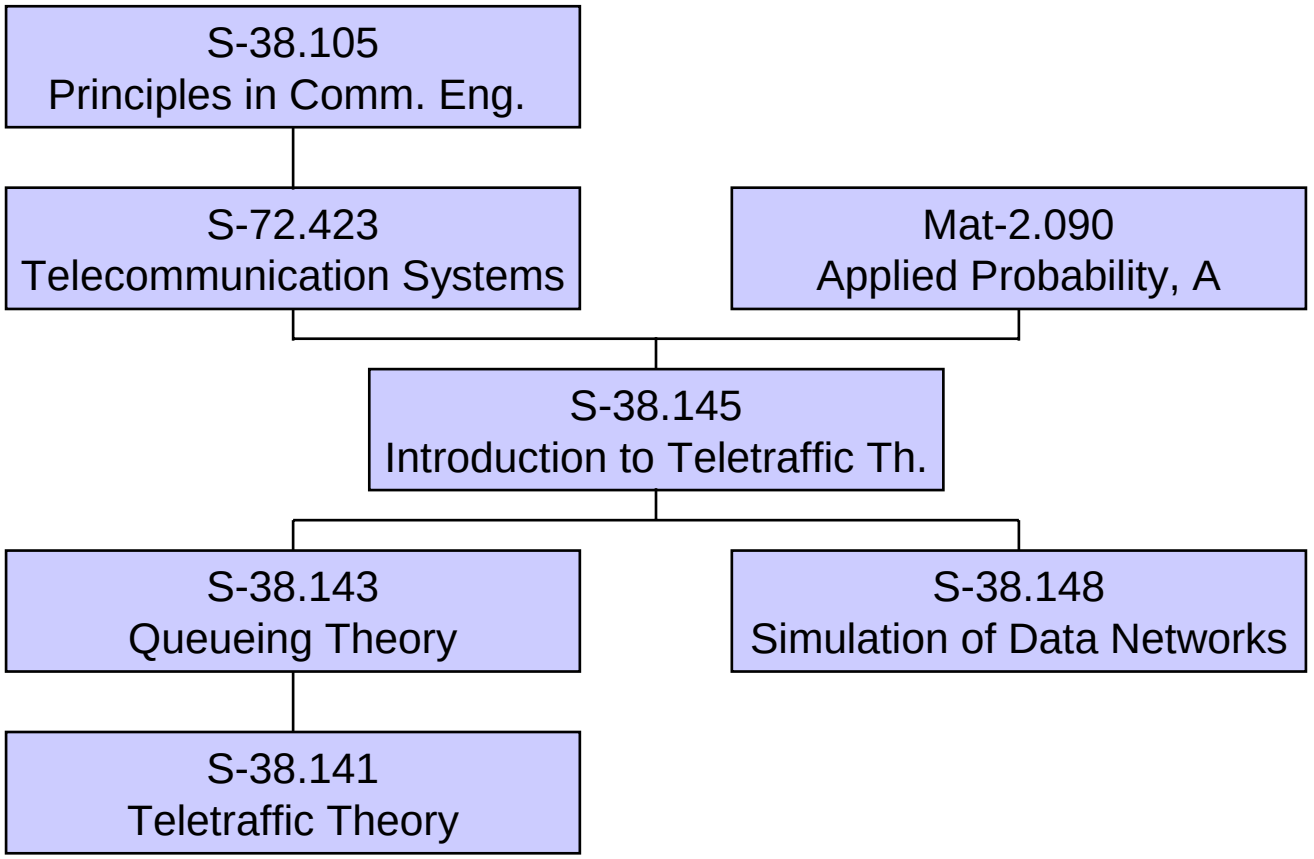
Lectures, exercises and course completion

- **Lectures** (2 hours/week):
  - On Mondays at 12-14 in lecture hall S3 (13 times)
    - First time: 24 January (week 4)
    - Last time: 25 April (week 17)
- **Exercises** (1 hour/week):
  - On Thursdays at 10-11 in seminar room H402 (12 times)
    - First time: 3 February (week 5)
    - Last time: 28 April (week 17)
- **Examination**:
  - Friday, 13 May, at 9-12 in lecture halls A and C (TKK main building)
  - Two retrial examinations
- **Course completion**:
  - Pass the examination

Schedule

Week	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18
Lecture	---	1	2	3	4	5	6	7	8	9	---	10	11	12	13	---
Exercise class	---	---	1	2	3	4	5	6	7	---	8	9	10	11	12	---

Status


S-38.105
Principles in Comm. Eng.
S-72.423
Telecommunication Systems
Mat-2.090
Applied Probability, A
S-38.145
Introduction to Teletraffic Th.
S-38.143
Queueing Theory
S-38.148
Simulation of Data Networks
S-38.141
Teletraffic Theory

Object of the course

- First step into the world of

Traffic Issues in Telecommunications

- Purpose is to **familiarize** the participants with
  - mathematical modelling of
    - various telecommunication systems and
    - their traffic
  - performance analysis and dimensioning of such systems
  - methods used for
    - traffic management and
    - their analysis

Planned contents (different from previous years)

1	Introduction	SA
2	Traffic	SA
3	Examples	SA
4	Basic probability theory recap	AP
5	Stochastic processes (1)	AP
6	Stochastic processes (2)	AP
7	Loss systems	SA
8	Queueing systems	SA
9	Sharing systems	SA
10	Simulation	AP
11	Other models	SA
12	Network dimensioning and load balancing	SA
13	Recap	SA

More details on the exercises

- Exercises distributed **only electronically** via the web
  - Available about a week before the corresponding exercise class
  - Typically 1 demonstration and 2 homework exercises per week
- **Homework exercises**:
  - do beforehand
  - mark the problems you have solved in the beginning of the exercise class
  - you can mark if you are ready to present your solution
  - depending on the exercise, 1-2 points available per exercise
  - no retrieval of homework exercises, but you have to be present in the exercise class and mark the exercises by yourself to get the points
- **Bonus points**:
  - 30% of the homework points = 1 extra point in the examination
  - 60% of the homework points = 2 extra points in the examination
  - 90% of the homework points = 3 extra points in the examination
- Bonus points valid for 1 year

THE END