Internet Protocols
- ETSF05/ETSF10 -

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(Kaan Bür)

ETSF05/ETSF10 – Internet Protocols

- http://www.eit.lth.se/course/etsf10

- Obligatory for C2 students, 7 ½ of a total of 9 credits
  - ETSF05
- Optional for D, E, WMSc students, 7½ credits
  - ETSF10

Course Objectives

- Understanding the Internet

- Practice with networks and protocols

- Critical judgement of theory and praxis

Intended Learning Outcomes

1. *Knowledge and understanding*:

    a) **Explain** basic network routing concepts and algorithms; **apply** them into given topologies;

    b) **Explain** how the Internet protocol suite operates; **describe** the functions of various protocols;

    c) **Explain** the concept and usage of node addressing; **classify** addresses into network layers.

Intended Learning Outcomes

2. *Skills and abilities*:

   a) **Examine** data packets and **compare** communication patterns to protocol descriptions;

   b) **Experiment** with real network routers and **configure** them according to instructions.

Intended Learning Outcomes

3. *Critical judgement and evaluation*:

   a) **Formulate** the relation between the various Internet protocols;

   b) **Evaluate** the suitability of an Internet protocol for supporting a given application type.

Assessment

	Intended Learning Outcomes	Activities	Assessment Tasks
Knowledge and Understanding	Explain basic network routing concepts and algorithms; apply them into given topologies	Student reading, Online discussions, Lectures, Tutorials	Individual contribution to online discussions, Online quizzes, Final exam
	Explain how the Internet protocol suite operates; describe the functions of its various protocols		
	Explain the concept and usage of node addressing; classify addresses into network layers		
Skills and Abilities	Experiment with real network routers and configure them according to instructions	Laboratory project 1	Project report 1
	Examine data packets and compare communication patterns to protocol descriptions	Laboratory project 2	Project report 2
Critical Judgement	Formulate the relation between the various Internet protocols	Online discussions, Design project	Individual contribution to online discussions, Term paper
	Evaluate the suitability of an Internet protocol for supporting a given application type		

| Mon	Tue	Wed	Thu	Fri	Mon	Tue	Wed	Thu	Fri
Lec.1	Lec.2	Exc.1			Exc.2				
			Online discussion						Quiz
Laboratory Project									→

Course Structure

- 3 learning cycles (2 weeks each)
- **2 laboratory projects (groups of 2)**
- 1 optional project (groups of 2)
- **1 final exam (or 3 quizzes)**
  - **Read = mandatory**

Lectures and Exercises

- Group 1
  - Internet routing
- Group 2
  - Transport layer, TCP
  - Network layer, IP
- Group 3
  - Application layer
  - Performance/Qos
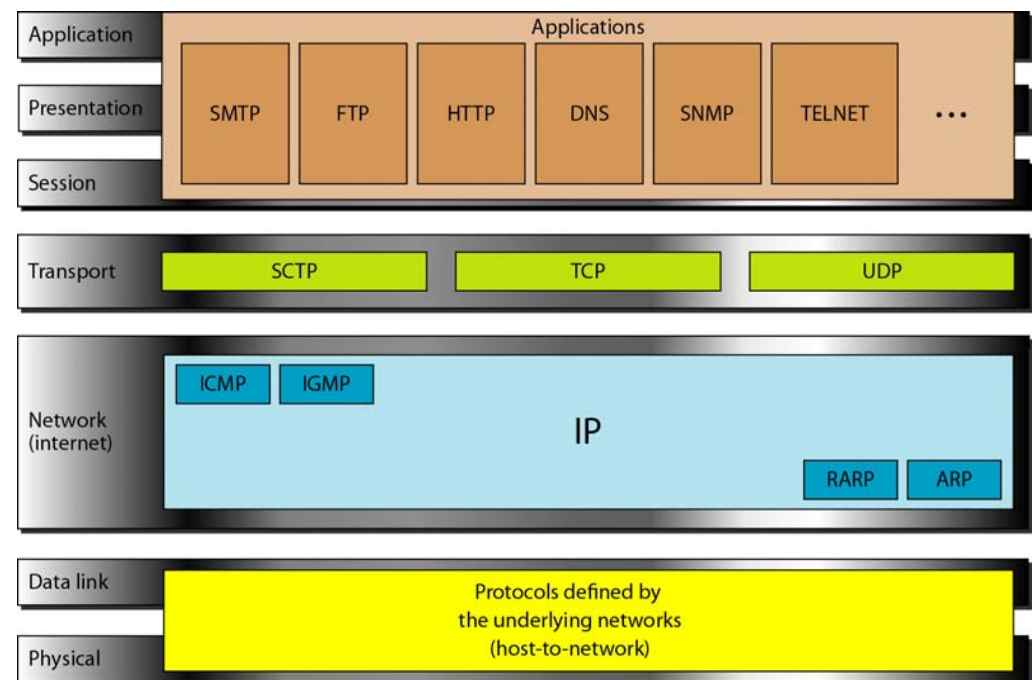
Online Discussions

- Via EIT moodle system
  - Significant contribution
  - Not necessarily on your first attempt!

Online Quizzes

- Via EIT moodle system
  - **Significant discussion contribution required**

- Same rules apply as in a written test
  - Individual work **(no groups)**
  - Original answers **(no copy/paste)**

moodle

- http://moodle.eit.lth.se
- Enrollment key: ********

Laboratory Projects

- Routing Lab
  - Registration via course's website
  - **To do: Read docs, prepare, then book lab time!**
- TCP Lab
  - Uses Wireshark
- Overlapping timelines!
  - Check deadlines! Not allwas same for ETSF05 and ETSF10

Design Project

- Optional

- Deeper individual study

Marks

- ## Mark 3
  - Pass 2 lab projects AND
  - Pass 3 midterms OR final exam part A

- ## Mark 4 and 5
  - Pass final exam part B (+1)
  - Pass Design Project(+1)

Bonus Programme

- For each quiz you passed, you are exempt from the corresponding section of final exam part A.

- If you passed all 3 quizzes, you pass the course with mark 3.

Workload Distribution

7,5 credits	200 h
Lectures and exercises	26 h
Online discussions and quizzes	6 h
Routing lab (~4 days)	32 h
TCP lab (~2 days)	16 h
Design project (opt.) (~4 days)	32 h
Self study time	**88 h**

Literature

- Data Communications and Networking
  - Behrouz A. Forouzan
  - 5th ed, McGraw-Hill

Staff

Course head:	Jens Andersson
Exercise supervisor:	Payam Amani
Lab supervisor:	William Tärneberg
Lab supervisor:	Björn Landfeldt
Course secretary:	Marianne Greiff Svensson

Final Remarks

- Last minute *minor* changes might occur. Stay tuned!
- Elect two course representatives (D, E, W_{MSc})
  - Give them feedback
- Participate in discussions
  - Help us for interactive lectures
- Course evaluation
  - Help us to improve the course

Most Important

Plan ahead your time!

ENJOY THE COURSE!

Today's Programme

- **Survey** on subject familiarity
  - with last year's exam
- Introduction to **Routing Lab**
  - *by Jens Andersson*