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Course Program ETSF10 Internet Protocols

Internet and Internet related protocols have evolved to constitute the common network structure for all data and telephone communication. This course gives an overview over these protocols and a deepening into some of them.

The course is optional for C4, D4, E4, and the Wireless Master Program. It is followed by C2 students as the second part of their ETSF05 course.

Intended Learning Outcomes

At the end of the course "Internet Protocols", the students will be able to:

1. In terms of *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.
2. In terms of *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.
3. In terms of *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.

Literature

In this course we use as textbook

Forouzan, Data Communications and Networking, 5th edition, McGraw-Hill, ISBN 978-007131586-9.

The study guide found on the course's web page shows which parts of the book are included in the course.

(It is possible for you to follow the course with the fourth edition of the book but it is entirely up to you to translate the study guide and exercise references:

Forouzan, Data Communications and Networking, 4th edition, McGraw-Hill, ISBN 978-007125442-7.)

Structure

The course's content is defined by the textbook study guide as well as the contents of the lectures, exercise seminars and laboratory projects. The course is divided into three parts, each consisting of two lectures, two exercise seminars, and one laboratory project, the third project is optional. Included in each part is also a quiz. This gives in total

- 6 lectures
- 6 exercise seminars
- 2 mandatory laboratory projects
- 3 optional quizzes, coupled with 3 online discussions
- 1 optional project

You will have to complete two laboratory projects. The time frame for the laboratory projects will partially overlap. The projects can be performed remotely or using your own computer. Supervisors will be available during the projects. Office hours will be announced on the course home page. Each project will end with a written laboratory report. To pass a laboratory project, its report needs to be accepted. A well carried out project is one that delivers a well-structured report in time, a project that discusses the assignments in a way showing that you have understood and penetrated them, the report has no or only minor fixes after first review and the group members work well together. Detailed information about the laboratory projects such as tutorials, guides, sample code and report templates will be found on the course home page.

Examination

There are three optional quizzes, performed via the department's moodle system, in the course. Each quiz is 1 hour long. The quizzes will be accessible for three days each. During this time window you can take the quiz any time you like. Once you have started, you will have 1 hour to answer the questions and submit the quiz. This is much like a normal quiz or exam, except for the fact that you can start taking the quiz any time within the quiz's open time window.

The prerequisite for taking the quizzes is to take active part in the course's topical discussions (online via moodle) with your own contributions. A satisfactory contribution shows you have understood the topic of discussion well, thought thoroughly about an answer and, finally, formulated an original response not limited to the initial question but also reflecting on the answers given by your classmates before you. Your answers must reflect your efforts to go deeper into the subject.

The course ends with a written final exam, which is optional if you have passed the three quizzes and are satisfied with mark 3 in the course. This exam is a normal written exam and it is divided into two parts, part A for mark 3 and part B for one higher mark.

For passing the course with mark 3 you have to

- Pass the 2 laboratory projects, AND
- Pass all 3 quizzes OR pass the final exam part A.

For passing the course with mark 4 you have to

- Fulfil the requirements for mark 3, AND
- Pass the third, optional project OR pass the final exam part B.

For passing the course with mark 5 you have to

- Fulfil the requirements for mark 3, AND
- Pass the third, optional project AND pass the final exam part B.

Bonus programme

There is a bonus programme in this course.

- In study period ht2, for each quiz passed, you are exempt from the corresponding section of final exam part A. If you have passed all the 3 quizzes, you are exempt from part A altogether, and you pass the course with mark 3. (Note that this bonus does not apply to part B of the final exam, which covers the extended reading material.)

The bonus programme applies only to the exams and re-exams given during the course instance that you are registered on.

Homepage and moodle

The course's home page is found on URL http://www.eit.lth.se/course/etsf10. The course also has an instance at the department's moodle system at URL http://moodle.eit.lth.se. Here you take the quizzes, and there are also forums for laboratory projects.

Staff

Course Head/Lecturer: Jens A. Andersson *jens_a.andersson@eit.lth.se* tel. 046 222 1486 office E:3143	**Exercise and Project Supervisor:** Payam Amani *payam.amani@eit.lth.se* tel. 046 222 7518 office E:3144
Project Supervisor: William Tärneberg *william.tarneberg@eit.lth.se* tel. 046 222 9021 office E:3135	**Project Supervisor:** Björn Landfeldt *bjorn.landfeldt@eit.lth.se* tel. 046 222 4407 office E:3145
Course Secretary: Marianne Greiff Svensson *marianne.greiff_svensson@eit.lth.se* tel. 046 222 9013 office E:3152g (EIT's course office)	

Disclaimer

Last-minute changes of deadlines and syllabus might occur, but will be kept to a minimum and will be well communicated. Any comments and suggestions for improvement are most welcome, during the course as well as afterwards.