

Course description HT2018

TNK103 Analysis of Communication and Transport Systems

Overview

The course TNK103 Analysis of Communication and Transport Systems is a project based course. The idea is that the student shall be able to carry out a small research-like project in their field of interest and specialize in one topic in the area of Traffic informatics, Quantitative logistics or Data and telecommunication. The student is given a project description, from which the student shall make a more detailed project specification and time plan together with the project supervisor. Each project will have weekly meetings with the project supervisor, and the project will be examined by project presentations and a written project report.

Aim and purpose

The purpose of the course is to gain insights into traffic, logistics and telecommunication systems by the means of a project. The different projects have different aim, but all are related to ongoing research at the division of Communication and transport system at ITN. The project covers problem definition, choice of methodology and analysis for a problem in one of the above mentioned areas. The aim is that the student, after finalizing the course, should be able to:

- Formulate a problem specification based on a problem description
- Find and digest literature relevant for the project
- Analyze problems in the area of telecommunication and transportation from a quantitative perspective
- Use problem specific methods for the analysis of a defined problem
- Plan a project, write documentations and perform project evaluations (opposition)
- Perform and evaluate a traffic, logistics of telecommunication project
- Present results in writing and in an oral presentation

The project will build on theories, methods and tools from one of the courses Planning and simulation of traffic systems, Logistics networks and transports or Data communication and the Internet. The project will also give some insights in how research is conducted in the area of quantitative methods.

Organization

The course is project-based. The course has the same administration for the three topic areas, and has common introductory lectures and common project presentations. All other parts are handled by within-group supervision.

A project leader and contact person has to be appointed for in each project. The project leader informs the course examiner of their existence and present the project group and project number. Each group is appointed one supervisor. Each week, one appointment with the supervisor is scheduled. Other appointments have to be booked directly with the appointed supervisor.

In order to share project documents within the group and between the group, the supervisor and the examiner, the project group shall use the “study room” folders for the course at <http://lisam.liu.se>.

Schedule

The course starts with the course introduction lecture, Tuesday the 6th of November at 13:15 in TP53. During this lecture the course is introduced, and the structure, organization, requirements and examination is presented. It is of *high importance* that you *show up at this first meeting, or send an email to the examiner* and inform me that you plan on taking the course. This email has to reach the examiner before Tuesday the 6th of November at 10:00. If you not show up on the first meeting, and do not send me the email, I will assume that you not are interested in the course this semester; it is very difficult to “jump in” later on.

During the first lecture you will be asked to form groups of 1-4 students and indicate, with an ordered preference list, which projects you prefer. The group members and preference list have to be submitted Wednesday the 7th of November by email to the examiner. The second lecture is scheduled for Thursday. During this lecture the groups are assigned to a project and project description. The course continuous with scheduled supervision. Each group meets with the project supervisor two times before each group delivers the project specification.

Examination, project requirements and documents

There are a number of decision points. Each decision point is associated with a document. Each of the points is given in the list below. Each document shall be discussed with the supervisor, and handed in to the examiner. Decision points:

- Tuesday November 6: Course presentation
- Thursday November 8: Group/project allocation meeting
- Tuesday November 14: First supervision meetings
- Tuesday November 19: Project specification and project plan delivery
- Tuesday December 6: Mid-project evaluation: implementation status
- Thursday December 14: Preliminary final report submission
- Monday-Tuesday December 19-20 Final report presentations
- Wednesday January 11: Final report submission and due date for project assessment submission

The project specification shall be formatted according to the project specification template. The project plan shall be formatted according to the template plan template and the final report shall conform to the format given in the template for the final report. All templates are available at the course web page.

Each group shall have at least one supervision meeting each week. All supervision meetings shall be documented in “minutes” documents. The meeting minutes shall be formatted according to the minutes template. The meeting minutes shall be uploaded to the shared project space within 3 days from the meeting. A self-assessment of the project shall be handed in after the final project presentations.

The examination and grading covers the project work, 6ECTS. The grade is based on the quality of the project documentation and the final report. The requirements for a specific grade are characterized

in the project description. Project feedback from the examiner is given in writing, after the project presentations. The mid-project report and plan may be used for differentiating the grades within a project group.

If you need more information or help on how to structure your project work, please refer to the LiU LIPS site at: <http://www.liu.se/pub/jsp/polopoly.jsp?d=5079&a=29790> Even more information can be found in the compendium "The LIPS project model", which is sold by "Bokakademin i Linköping", <http://www.bokakademin.se/>

A preliminary final project report shall be submitted the 14th of December. Your report will be distributed to the other groups, and you will be assigned one report for which your group will be responsible to ask two questions during the final report presentations the 19th or 20th.

You have to submit the absolute final version of your project report by the end of the semester, that is, a few weeks after the presentation (the due date is the 11th of January) at the same time as the due date for the project assessment.

Examiner and supervisors

Examiner:

Clas Rydergren, clas.rydergren@liu.se

Project supervisors:

Clas Rydergren, clas.rydergren@liu.se (Traffic)

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