



# FIK3621 Tele Economics, basic course for PhD students 7.5 credits

Tele-ekonomi, grundkurs för doktorander

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for FIK3621 valid from Spring 2015

## Grading scale

G

## Education cycle

Third cycle

## Specific prerequisites

PhD students admitted to KTH programs

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

The course covers techno-economic aspects at three levels:

1. Technology and services
2. Business models and operator business
3. Telecom markets and regulation

After the course the student should be able to describe and analyze:

- A. Structure of and actors on the telecom market and different types of telecom regulation
- B. Different types of business models and type of telecom operators
- C. Architecture, elements and cost structure of mobile networks and services

The focus of the course is

- Understanding the big picture for telecom markets and business
- To put mobile technology and services in an overall market context
- To provide the students with tools to put their own research into an overall context

## Course contents

The course will cover techno-economic modelling and analysis of mobile communications systems, this is done at three different levels

1. Technology and services
2. Business models and operator business
3. Telecom markets and regulation

The course is conducted "top-down", i.e. we start with the big picture in terms of markets and then go further "down" to business and technology and services.

(The course IK3618 (tele-economics advanced level) is carried out "bottom up" and is focusing on aspects related to the own research of the PhD student).

## Disposition

The course is a mix of lectures and three individual assignments, the latter comprising about one week of work each. The lectures will cover all areas and aims to provide support and tips for homework assignments.

Assignment 1 and 2 consists of analyzing the telecoms market in one country and comparing the strategies of two mobile operators in the country indicated.

Assignment 3 can be either dimensioning and cost analysis of a mobile network under given conditions, or an "own" task where you do a cost / revenue analysis (including cost structure) of a self-selected product or service. The latter is suitably linked to the doctoral student's own research.

For all assignments included the following elements.

1. Develop a written (draft) report
2. Review of reports of other students
3. Oral presentation
4. Produce a final report (this is used for the rating)

The course is conducted simultaneously with the Masters Course IK2514 (given every autumn) and the lectures by KTH teachings staff and about 10 external guest lectures. Assignment 1 and 2 are the same as for the master level course.

## Course literature

Selected research papers

## Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

The examination is based on

- A number of individual assignments
- A final report with reflections on the application of tele - economic methods in the research and problem areas of the PhD student.

There is no written exam

## Other requirements for final grade

Approved home work assignments for all levels and an approved final report

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.