



# AG1136 Functions and Interactions in Sustainable Cities - Energy and Environment 9.0 credits

Funktioner och interaktioner i den hållbara staden - energi och miljö

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

## Establishment

Course syllabus for AG1136 valid from Autumn 2016

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

Entry requirements for admission to Engineering 300 credits within Energy and Environment or the equivalent

# Language of instruction

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

## Intended learning outcomes

The general aim of the course is to create understanding of the interplay between the different functions of the city and how the interplay is influenced in time and space of different interventions as well as to give students basic knowledge of how the urban planning process is organised and which actors are involved in the process.

On completion of the course, the student should be able to:

- describe different steps and stages the planning process
- identify key actors in the planning process and describe which role they have
- describe at a general level the settlement history of the city and give examples of driving forces that have shaped the city during different periods
- describe and analyse the different functions of the city and the interplay between the functions
- identify conflicts and synergies between the different functions of the city
- analyse preconditions that influence the interplay between the functions of the city
- identify alternatives that contribute to sustainable city development

## Course contents

The city is a dynamic system which changes continuously as a result of e.g. developments in the society, new technical solutions or political decisions. To be able to study the city, knowledge of the different functions of the city is needed such as housing, recreation, retail, education and work. The inhabitants of the city move between these functions to act, work or meet others, which creates meeting places and different movement patterns (traffic). The interplay in the city reflects different dependencies between the functions of the city and influence inter alia the design of the city. There are however many other factors that influence the design of the city such as geographic, economic, cultural and social preconditions, technology etc. This implies that the city changes in time and space as the preconditions that influence the design of the city are changing. Knowledge of the interplay between functions creates possibilities to identify conflicts and generate synergies that contribute to sustainable urban development.

Planning of the future development of the city and the region takes place within a regulatory framework that provides different public authorities tools and resources to influence the development of inter alia settlement patterns, infrastructure and environment. The possibilities to influence the development are however limited, as there are different driving forces that have a strong effect on societal change.

The course addresses the different actors that participate in urban planning (authorities, developers and the public), and which roles and possibilities they have to influence the

planning process. Further, the internal order of the city and driving forces that influence the interplay between the functions of the city are studied. This knowledge helps inter alia to assess the opportunities to introduce new solutions for urban traffic and energy systems, and to evaluate different alternatives to influence the design and dynamics of the city.

## Course literature

Kurskompendium med aktuella texter om ämnesområdet

## Examination

- PRO2 - Group Work, 2.0 credits, grading scale: P, F
- PRO1 - Project Assignment with Individual Submission, 2.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Exam, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Exam, 3.5 credits, grading scale: A, B, C, D, E, FX, F

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.

## Other requirements for final grade

The course requires attendance on at least 75% of lectures. Project assignment with individual submission (PRO1), 2 credits; Group assignment (PRO2), 2 credits; Examination (TEN1), 3.5 credits; Examination (TEN2) 1.5 credits.

## 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.