



# AG2141 Urban Infrastructure

## 7.5 credits

### Urban Infrastructure

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

### Establishment

Course syllabus for AG2141 valid from Spring 2011

### Grading scale

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

### Education cycle

Second cycle

### Main field of study

The Built Environment

### Specific prerequisites

3 years of university studies within the field of Planning, Architecture, Engineering or Social Science.

For single course students: 150 university credits (hp) including 30 university credits (hp) in Architecture, Urban and Regional Planning or Civil Engineering in the Built Environment, and documented proficiency in English corresponding to English B.

### Language of instruction

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

## Intended learning outcomes

The aim of the course is to provide basic knowledge on the functions, dynamics and interactions of urban infrastructure systems. After fulfilling the course requirements students should be able to:

- Demonstrate a general understanding of the planning and management of urban infrastructure systems.
- Describe the dynamics within and between urban infrastructure systems, and their relation to the built environment and economic development.
- Provide a critical analysis of the consequences of ongoing developments and future needs on urban infrastructure provision.
- Assess the qualities of infrastructure systems in terms of vulnerability, sustainability, equity and efficiency.

## Course contents

The course provides an introduction to the planning and management of urban infrastructure, dealing with different types of infrastructure systems, such as energy supply, drinking water supply, sewerage and waste disposal, transportation and telecommunications. In the course the infrastructure systems are studied within the context of the organisations responsible for the management and development of these facilities, and the economic and legal conditions that regulate the systems.

Infrastructure systems have been developed gradually over a period of several generations. Adjustment of these systems towards future needs and developments can thus only take place in a slow pace, and requires deeper understanding on the historic development, the structure and the dynamics of infrastructure systems. This also implies that decisions on infrastructure investments should consider the long-term consequences on urban structure, financing and management. In the course the needs for change will be identified as part of a discussion on the long-term development of infrastructure systems. The opportunities for change will be discussed in relation to the dynamics of the infrastructure systems.

The funding of investments, the charging of services and the equity of access to infrastructure facilities are issues that will be discussed in the course. Furthermore, the impacts of ongoing structural changes such as deregulation, privatisation and internationalisation, on the planning and management of urban infrastructure will be analysed. International perspectives are merged with considerations relating to Swedish contexts.

The course consists of lectures, a literature seminar and a project work in which students are preparing a paper on strategies for the development of sustainable urban infrastructure systems.

## Course literature

Compendium that includes a collection of recent publications within the field of study.

## Examination

- ÖVN1 - Exercises/Excursions, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Written examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- NÄR1 - Lectures, 1.5 credits, grading scale: P, 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

In order to pass the course, students need to:

Attend 75 percent of the lectures and participate in the literature seminar and the study visit (1,5 cr)

Participate in and contribute to the group work that involves the writing and presentation of a paper (3 cr)

Pass the written exam (3 cr)

## 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.