MJ2685 Smart Cities and Climate Mitigation Strategies- Project Based 7.5 credits

"Smart Cities" och klimatåtgärder- projektbaserad

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

Establishment

Course syllabus for MJ2685 valid from Autumn 2012

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering, Mechanical Engineering

Specific prerequisites

At least 100 academic credits (ECTS) in a program of engineering or natural science corresponding knowledge including documented proficiency in English B or equivalent.

Language of instruction

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

Intended learning outcomes

After passed course the student should be able to:

· Describe and explain concepts of “Smart Cities” based on scientific literature and reports from case studies.

· Describe and discuss the mitigation challenges for the cities today and in the future.

· Investigate, analyze and explore “Smart City“ concepts and solutions in relation to the climate mitigation challenges for important urban development sectors, such as transportation, buildings, consumption, lifestyle, energy production, waste management, water management, etc.

· Complete a “Smart City” team-based project, related to climate mitigation on an urban level together with a relevant stakeholder such as a waste company, the municipality, or a local energy or water utility.

· In a written and oral form present the result from a project work in a scientifically acceptable form.

Course contents

The concept of a “Smart City” reflects that ICT is increasingly integrated in all areas of urban development and urban living. It is also a reflection of how ICT is being designed with sustainability purposes.

The course will provide knowledge about the concept of Smart Cities and their relation to climate mitigation strategies. These strategies are geared toward the municipalities themselves, as well as urban actors across all city sectors, including companies, property owners, utilities, households, etc.

This course is project-based with a multidisciplinary approach, including environmental, technological, economic and social aspects. The basic aim of the course is to, on a system level, investigate and explore the potentials of the concept of “Smart Cities” in relation to the challenges associated with mitigation strategies for the cities of today and tomorrow.

Disposition

- Lectures – 6 hrs (2hrs x 3 lectures)
- Seminars –2 hrs/ intro/ planning
- 2 hrs/ half time feedback
- 4 hrs presentation of project work
- Study visits organized and documented by the students themselves

- 3 study visits
- Individual Assignment - Opposition
- Group Project & Written report

Course literature

Meddelas vid kursstart (Will be announced at the start of the course.)

Examination

- PRO1 - Project, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- LIT1 - Literature Assignment, 2.0 credits, grading scale: P, F
- FLT1 - Study Visit, 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.

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.