

AG2141 Urban Infrastructure

Master's in Environmental Engineering and Sustainable Infrastructure (EESI)

Period 3, 2017-18

7.5 credits

Teaching Staff

Course responsible: Andy Karvonen, apkar@kth.se, Building L 1st floor

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Course Content

Contemporary cities are supported by a diverse range of infrastructure networks including energy, water, wastewater, transportation, and communications. These networks are traditionally defined by their technical and economic characteristics but they also have significant (and often unappreciated) spatial, political, and cultural implications. Today, the upgrading and reimagining of infrastructure services is central to notions of sustainability, resilience, economic prosperity, and improved quality of life.

This course provides an opportunity for students to study the co-evolution of technology and cities using theories and case studies from urban history, science & technology studies, urban geography, planning, and architecture. The course explores historical and theoretical ideas about cities and infrastructure as well as contemporary issues that address infrastructure trends and debates. The course also provides students with the opportunity to develop research skills to study infrastructure networks. The knowledge and skills taught in this course will allow students to develop a critical perspective on technology and society as it relates to cities of the past, present, and future.

The course consists of lectures, seminars and group work in which students will prepare a presentation and paper on a specific urban infrastructure system.

Prerequisites

- 3 years of university studies within the field of Planning, Architecture, Engineering or Social Science.
- For independent applicants: 150 credits including 30 credits in Architecture, Planning or Civil Engineering and English B.

Learning Aims

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 conversant in a range of theories addressing technology, society, and urban development;
- Recognise and appreciate the relational and spatial aspects of urban infrastructure development; and
- Have the ability to apply analytical skills to critically assess infrastructure networks in terms of sustainability, liveability, and resilience.

Literature

The course readings will be comprised of key publications on urban infrastructure and will be posted on Canvas in advance of the lectures and seminars.

Examination

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

Requirements for Final Grade

To receive a passing grade, students need to:

- Attend 75 percent of the lectures and participate in the literature seminar and the study visit (1.5 credits)
- Participate in and contribute to the group work that involves the writing and presentation of a paper (3 credits)
- Pass the written exam (3 credits)

Schedule

Week	Date	Time	Room	Topic
3	17 Jan (W)	10:00-12:00	L43	Introduction: The Sociotechnical Study of Cities
	19 Jan (F)	10:00-12:00	B22	Defining Technology, Defining Infrastructure
4	22 Jan (M)	13:00-16:00	Q26	The Rise of Large Technical Systems in Cities
	24 Jan (W)	10:00-12:00	L43	Splintering Urbanism
5	29 Jan (M)	13:00-16:00	L41	Smart Cities and Urban Innovation
	31 Jan (W)	13:00-16:00	L43	District Heat Networks in Sweden (Dick Magnusson)
6	5 Feb (M)	13:00-16:00	V12	Green and Blue Infrastructure (Sara Borgström)
	7 Feb (W)	13:00-16:00	L43	Sanitary Infrastructure in Africa (Nelson Ekane)
7	13 Feb (Tu)	13:00-16:00	L42	WRITTEN EXAM
	14 Feb (W)	10:00-15:00		SITE VISIT – Kista Urban ICT Arena
8	19 Feb (M)	13:00-16:00	L21	Group work
	21 Feb (W)	13:00-16:00	L43	Group work
9	28 Feb (W)	13:00-16:00	B22	Group work
	2 Mar (F)	10:00-12:00	B22	Group work
		13:00-16:00	B22	Group work
10	5 Mar (M)	09:00-12:00	B22	GROUP PRESENTATIONS
		13:00-16:00	L41	GROUP PRESENTATIONS
11	16 Mar (F)	Due 23:59		GROUP REPORTS DUE