

AG2141 Urban Infrastructure (7.5 Credits)

Master's in Environmental Engineering and Sustainable Infrastructure
2020-21, Period 3

Teaching Staff

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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 prepare a presentation and paper on a relevant topic.

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; and
- 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.

Class Schedule

All class meetings are online in Andy's Zoom room: <https://kth-se.zoom.us/my/apkar>

Week	Date (Day)	Time	Topic
3	20 Jan (Wed)	15:00-17:00	Introduction: The Sociotechnical Study of Cities
	22 Jan (Fri)	13:00-16:00	Understanding Technology
4	27 Jan (Wed)	15:00-17:00	Urban Infrastructure and the Rise of Large Technical Systems
	28 Jan (Thu)	10:00-16:00	Virtual Site Visit: Hammarby Sjöstad
5	3 Feb (Wed)	15:00-17:00	Splintering Urbanism
	5 Feb (Fri)	13:00-16:00	Experiments, Laboratories and Testbeds
6	10 Feb (Wed)	15:00-17:00	Urban Energy Systems
	11 Feb (Thu)	10:00-12:00	The Politics of Greening Cities
	12 Feb (Fri)	13:00-16:00	Group Project Work
7	17 Feb (Wed)	15:00-17:00	End Users and Everyday Life
	19 Feb (Fri)	10:00-12:00	Smart Cities and Digitalisation
	19 Feb (Fri)	13:00-16:00	Group Project Work
8	25 Feb (Thu) 13:00 to 26 Feb (Fri) 18:00 – Home Exam		
9	5 Mar (Fri)	9:00-16:00	Group Presentations
11	19 Mar (Fri) – Group Report Deadline		

Literature

The course readings are comprised of key publications on urban infrastructure and are 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 fulfil the following requirements:

- Attendance (1.5 credits) - Attend 75 percent of course meetings (lectures, seminars, and study visit) and submit course exercises to Canvas
- Group Project (3 credits) - Contribute to the group project including the presentation and written report
- Home Exam (3 credits) - Pass the written home exam

Grading Criteria

Grade	Home Exam	Group Project
E	Demonstrate a basic level of understanding of class concepts and summarise these ideas in writing.	Participate in group work activities, contribute to the group presentation and serve as a co-author of the final report.
D	Demonstrate a moderate level of understanding of class concepts and synthesise these ideas in writing.	In addition to the demands of E, reflect a high level of understanding of the class concepts and project issues.
C	Demonstrate a high level of understanding of class concepts through coherent and compelling writing.	In addition to the demands of D, deliver a coherent presentation and report that clearly identifies tensions and synergies of theory and practice.
B	In addition to the demands of C, demonstrate the ability to interpret and assess class concepts.	In addition to the demands of C, demonstrate the ability to formulate original and sophisticated arguments.
A	In addition to the demands of B, demonstrate the ability to formulate critical and constructive arguments.	In addition to the demands of B, demonstrate a mastery of the class concepts and the ability to address the project issues both critically and constructively.

The grades FX and F are unsuccessful study results. FX means ‘fail – some more work is required to pass’ and F means ‘fail – considerably further work is required.’

Cheating and Plagiarism

If a student is caught cheating during the exam (e.g. cooperation or using technical help materials that are not permitted) or plagiarising (copying parts of someone else’s work and submitting it as one’s own), his or her case will be reported to the KTH disciplinary board.

For more information on cheating and plagiarism, see the following webpage:

<https://www.kth.se/en/student/studentliv/studentratt/fusk-och-plagiering-1.323885>

Registration Information

If you have questions regarding registration or examinations, please contact Therese Gellerstedt at studentexp.som@abe.kth.se.