



# FAK3118 Visualizing the World - Making Sense of Our Environ- ments 4.0 credits

Att visualisera världen - att förstå vår miljö

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

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for FAK3118 valid from Spring 2019

## Grading scale

P, F

## Education cycle

Third cycle

## Specific prerequisites

Eligible applicants are students who meet the requirements for admission to graduate/PhD studies in history or other humanities and social sciences.

## Language of instruction

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

## Intended learning outcomes

The course investigates tools, concepts and processes of creating and displaying visual information. After completing the course, students should have attained a thorough understanding of the relationship between visualized sensorial data and political and economic intervention in social and natural environments. Students should be able to

- understand that instruments and inscriptions are not neutral and objective but incorporate specific epistemological premises and reproduce a particular interpretation of the world;
- assess different forms of visuals, like images, graphs, maps and models;
- analyze different visual tools and sensory devices, from ultrasound to satellites, GPS and GIS;
- explain how recorded data are intimately connected to power;
- study and present examples for this connection of power and visual information;
- evaluate the political and economic implications of visual information;
- understand and evaluate how social and natural environments are shaped by visual information, anticipating and encouraging particular forms of understanding, modeling, and planning.

## Course contents

The course consists of lectures and plenary discussions, group work and poster presentations. The course includes guided tours of the Kiruna station of the Esrange Space Center and of the Abisko Scientific Research Station ANS. Lecturers are Petra Gehring, Gabriele Gramelsberger, Mikael Hård, Sabine Höhler, Jens Lachmund, Josef Wiemeyer, Nina Wormbs.

Lectures and discussions focus on the following topics:

- the co-construction of data and instruments on the one hand and the five senses on the other, with a focus on technologies of visualization;
- remote-sensing devices and the perception of environments: meteorological instruments, satellite-mediated data, computer applications, simulations and forecasts;
- concepts and tools of monitoring public space: Internet surveillance, population screenings, cell phone positioning; electronic tagging, collecting smart-phone user data;
- the political and economic power of objectified data: environmental statistics, resource surveys;
- the role of images in economic, political, and military affairs: air-surveillance photos, emission charts, land-use maps, climate models.

## Course literature

Among other texts, readings will encompass Jens E. Kjeldsen, "Visual argumentation in an Al Gore Keynote presentation on climate change," in: F. Zenker, ed., *Argumentation: Cognition and Community*. Proceedings of the 9th International Conference of the Ontario Society for the Study of Argumentation (OSSA), May 18-21, 2011. Windsor, ON (CD ROM), pp. 1-12. David Pinder, "Subverting Cartography: The Situationists and Maps of the City," *Environment and Planning A* 28(3) 1996, 405-427. D. Keim et al., "Visual Analytics: Definition, Process, and Challenges," in: A. Kerren et al., eds, *Information Visualization*, LNCS 4950. Berlin: Springer, 2008, pp. 154-175. Stefan Helmreich, "From Spaceship Earth to Google Ocean: Planetary Icons, Indexes, and Infrastructures," *Social Research* 78(4) 2011, special issue "The Image," pp. 1211-1242. Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming*. Boston: MIT Press, 2010

## Examination

- UPP1 - Essay, 4.0 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.

## Other requirements for final grade

In order to pass the course, participants are expected to

- prepare by reading pre-circulated texts (ca. 400 pages)
- design and present a poster of their current research project (size A1)
- take active part in class discussions
- take active part in two group tasks (lecture discussion and small research project)

## 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.