AK2216 Artificial intelligence and sustainability 7.5 credits

Artificiell intelligens och hållbarhet

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

Establishment

The official course syllabus is valid from the autumn semester 2026 as decided by the Faculty Board decision HS-2025-0295.

Grading scale

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

Education cycle

Second cycle

Main field of study

Environmental Engineering

Specific prerequisites

120 credits in technology, natural sciences, humanities or social sciences, as well as the upper secondary school course English 6/English B.

Intended learning outcomes

After passing the course the student should be able to:

- Analyze the interaction between artificial intelligence and sustainability.

- Reflect on the opportunities and risks of AI in an environmental and societal perspective.
- Problematize narratives about AI in a sustainability perspective.
- Analyze, compare and explain the relationship between AI and the environment from material, ethical and social perspectives.

Course contents

In this course, we study AI from a sustainability perspective and delve into how the new technology can both facilitate sustainability and hinder it, depending on how it is developed and used. We will study the problems that have emerged around AI so far, such as bias in datasets, surveillance of citizens, energy and resource use, ownership and power concentration around tools and models, but also about how the new technology has enabled improvements from a social and environmental perspective.

In the course, AI is investigated throughout the production chain, from the extraction of minerals and energy resources to its application in specific contexts. We immerse ourselves in critical AI research that shows how AI works in different societal contexts that relate to sustainability, with a particular focus on climate and environmental issues. The course also provides an opportunity for in-depth reflection on how AI can be developed to better support sustainability work.

Examination

- INL1 - Assignments, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- SEM1 - Seminars, 1.5 credits, grading scale: P, F

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.